

REVIEW AND APPROVALS

MASON NECK NATIONAL WILDLIFE REFUGE

Lorton, Virginia

MARUMSCO NATIONAL WILDLIFE REFUGE

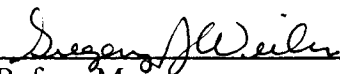
Woodbridge, Virginia


FEATHERSTONE NATIONAL WILDLIFE REFUGE

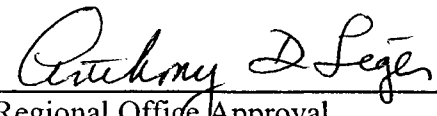
Woodbridge, Virginia

ANNUAL NARRATIVE REPORT

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Refuge Manager Date

 4/20/01
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 4/23/01
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MASON NECK
NATIONAL WILDLIFE REFUGE
Lorton, Virginia

INTRODUCTION

The Mason Neck National Wildlife Refuge is located in Virginia, 18 miles south of Washington, D. C. Nestled on an 8,000 acre boot-shaped peninsula jutting out into the Potomac River, the Refuge is dominated by mixed hardwood and pine forests, high bluffs, and about 300 acres of freshwater marshes. From the initial acquisition of 845 acres in 1969, Mason Neck has grown to 2,277 acres, including 789 acres leased in 1982 from the Northern Virginia Regional Park Authority.

The Refuge was established in 1969 as the Nation's first bald eagle Refuge using funds provided under the Endangered Species Act. Eagles have nested and wintered on the peninsula since before the 1700's. Currently, there are three nest sites on the refuge (two on leased land) and four nests on other parts of the peninsula. During the summer, about 20 to 30 eagles use the refuge and local waters. This increases during the winter to 40 to 60 eagles in the area.

Though located within easy driving distance for approximately 10 million residents of Virginia, Maryland, and Washington, D. C., the Refuge has an annual visitation of about 18,000 people. This is due to limited public use facilities and competition from over 400 nearby Federal, State, regional, county, and city parks.

Until 1974, the Mason Neck National Wildlife Refuge was a subunit of Blackwater National Wildlife Refuge. It then became an independent unit with a manager and two subunits of its own, Featherstone and Marumsco Refuges totaling 320 and 64 acres respectively.

The office is located in GSA rental space in a strip mall in Woodbridge, Virginia, less than nine miles from Mason Neck and only a mile from Marumsco and Featherstone Refuges.

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A. HIGHLIGHTS

On October 10, 1995 the refuge hosted a boat tour for Director Mollie Beattie and press from CNN, Chicago Tribune, and Washington Post. She discussed endangered species by taking the press on a refuge bald eagle survey.

B. CLIMATIC CONDITIONS

The meteorological summer of 1997 was one of the driest on record.

On September 7, 1997 Hurricane Fran swept through the area causing major flooding and marked the second 100 year flood of the year in the mid-Atlantic area.

In June 24, 1996 a tornado swept through Fairfax County. The refuge was not in it's direct path but did have numerous trees down.

The summer of 1996 was known as "the summer without summer", very cool and wet.

The winter of 1995-96 was the snowiest on record with 45.8" of snow. The January 8 blizzard was the third blizzard of the winter and set snow records at Dulles (24.6") and National (17.1"). This weather shift was part of El Nino which caused the third warmest winter ever (December through February) for the entire country.

The summer of 1995 was one of the hottest and driest on record with a 33 day drought, a 21 day span of temperatures in the 90's, and record low river flow.

Two inches of ice on January 17, 1994 paralyzed the area as a great arctic outbreak set in and kept temperatures as low as -4°.

Yr	Month	Temp (F°)			Precipitation (")		Max Wind (Knots)
		High	Low	Mean	H ₂ O equiv.	Snow	
97	Jan	76	4	37.5	2.67	4.2	41
	Feb	79	23	45.1	2.51	6	44
	Mar	78	27	49.3	5.04	0	48
	Apr	83	29	55.0	2.7	0	44
	May	97	27	52.0	1.88	0	38
	Jun*	101	46	72.5	2.63	0	37
	Jul	38	13	26.2	2.39	0	39
	Aug	40	13	24.6	3.37	0	31
	Sep	34	8	3.71	3.71	0	45
	Oct	33	-2	14.3	4.4	0	30
	Nov	20	-6	8.1	5.94	0	38
	Dec	18	-4	4.7	1.8	0	37
96	Jan	60	6	32	7.13	31.6	46
	Feb	70	-8	36	2.37	19.8	42
	Mar	72	11	41	3.85	7	44
	Apr	89	29	55	4.0	0	43
	May	96	34	61.5	6.83	0	62
	Jun	95	45	75.4	4.31	0	46
	Jul	95	56	77.4	7.51	0	35
	Aug	95	61	76.7	2.93	0	29
	Sep	91	49	70.6	10.75	0	35
	Oct	85	36	59.5	5.2	0	31
	Nov	76	20	43.8	3.99	0	40
	Dec	68	15	43.2	5.63	0	39
95	Jan	71	14	39	3.57	3.90	31
	Feb	43	23	33	1.61	7	41
	Mar	78	22	-	2.14	-	-
	Apr	90	29	54	3.15	0	36
	May	75	51	63	4.61	0	41
	Jun	92	51	72	4.60	0	32
	Jul	98	55	79	4.05	0	28
	Aug	99	56	78	.47	0	24
	Sep	94	47	69	.62	0	35
	Oct	87	33	59	10.08	0	33
	Nov	73	23	41.7	5.57	0	43
	Dec	67	14	34.4	2.64	1	38

Yr	Month	Temp (F°)			Precipitation (")		Max Wind (Knots)
		High	Low	Mean	H ₂ O equiv.	Snow	
94	Jan	60	-5	27	3.99	6.3	38
	Feb	68	12	35	4.45	3.20	41
	Mar	85	22	44	8.29	4.30	41
	Apr	89	33	60	1.54	0	35
	May	92	37	60	1.63	0	41
	Jun	98	47	76	5.82	0	66
	Jul	96	65	80	6.39	0	34
	Aug	90	52	73	4.16	0	27
	Sep	89	42	66	4.48	0	29
	Oct	81	30	55	1.83	0	24
	Nov	77	24	50	2.14	0	35
	Dec	71	20	42	2.5	0	34

Year	Date	Event
1993	Apr 15	DC high temp 79 1 st 70+ day of year latest ever
1993	Jul	avg tem 83.1 is all-time monthly record high avg,
1993	Jul 19	record heat wave ends, 16 consecutive 90+ days (7/ 3-18)
1993	Mar 4	wet & windy storm thrashes Mid-Atlantic, DC gets 2-5" rain & wind >50mph
1993	Mar 13	blizzard of 93
1993	Nov 28	DCA 1.77" on 27 th , 2.26" on 28 are both daily records and 4.03" is 24 hr Nov record, storm drops 4-8" locally

C. LAND ACQUISITION

1. Fee Title

The Army initiated public meetings on April 2, 1993 to discuss disposal of the Woodbridge Research Facility (Harry Diamond Laboratory). Refuge Manager Milton and secretary Mitchell attended. On May 5, Refuge Manager Milton met with Region 5 Realty officer Gib Chase and staff from the Library of Congress, CH2M, and Department of the Army to discuss each agency's interest in the disposal of the Woodbridge Research Facility. The Fish and Wildlife Service (Service) is interested in the whole property while Library of Congress wants either just the uplands which will be used for warehousing, or the whole area, leasing portions to the Service. By the end of the summer, the Army published a draft Environmental Assessment for closure of Woodbridge Research Facility with the preferred alternative being for the Service to get the wetlands and the uplands going to Prince William County for economic development. A House bill with wording in a Department of Defense bill specifying the uplands be given to Library of Congress was defeated and replaced with wording that would give the Library of Congress land at Fort Meade instead. Senatorial language by Virginia Senators Warner and Robb directed the land to go totally to the Fish and Wildlife Service.

On May 6, Fish and Wildlife Service Director Mollie Beattie and Under Secretary of the Army Joe Reeder were flown into the Woodbridge Research Facility via a black hawk helicopter to attend a meeting to discuss the potential transfer of the facility to the Mason Neck NWR. Refuge Manager Milton and Biologist Melvin attended the meeting and provided background information pertaining to the status of the Woodbridge Reuse Committee and their proposed "reuse alternatives" for the facility. Other attendees included; Dan Sakura (Special Assistant to Assistant Sec. Frampton), Bill Takakoski (Special Assistant to Under Secretary Reeder), Don Manuel (Department of Defence - DOD), Col. William Harvey (DOD), William Vault (DOD), Teresa Klines (DOD), Col. William Meadows (DOD), Maj. Jim Spain (DOD), Jean Gillen (DOD), and Todd Waltemyer (DOD).

Refuge Manager Milton and ORP Schultz hosted a canoe tour of Marumsco NWR and the Woodbridge Research Facility shoreline for Department of the Interior staff and their guests on August 1, 1993. The activity was requested and coordinated by Dan Sukura of Assistant Secretary George Frampton's office to familiarize personnel with the potential acquisition of Harry Diamond Lab by the Service.

Staff took part in several Woodbridge Research Facility Reuse Committee meetings during 1994. Attempts to get legislation to have the Army directed to turn over the property is now going through Congress. Public meetings, negotiations between agencies, and discussions regarding cleanup of the site before the Service could take over continued through 1997.

Biologist Melvin coordinated an "Appreciation/Brunch" at the Woodbridge Research Facility on October 30, 1994. Approximately 100 people attended the Sunday brunch held at the Facility which celebrated its acquisition and addition to the Mason Neck NWR. Welcoming remarks were made by Refuge Manager Milton followed by speeches from George Frampton, Assistant Secretary for Fish, Wildlife and Parks, Ronald Lambertson, Regional Director - Region 5, and Jim Waggener, Chairman of the Prince William Natural Resources Council and instrumental community representative who led community involvement in the transfer process. All in all, the event was very well received. Birding and area tours were provided along with displays and a canoe trip from Mason Neck. The Refuge staff all worked hard on sending out mailings, developing program handouts and brochures, coordinating events and manning the various activities. Brunch was donated by a local bakery in Alexandria and the food was excellent.

2. Easements

Refuge Manager Milton, Refuge Operations Specialist Schaff, and Maintenance Worker Boska spend June 14 and 15, 1993 repairing high water damage to the Miller property, a FHA easement/wetlands restoration project built in 1990. Flooding had eroded the levee and destabilized the pipes. Staff reinstalled the riser, reset the pipe in concrete, patched the levee in two locations and seeded the site.

On July 22, 1993 Refuge Manager Milton and Maintenance Worker Boska inspected a possible wetland restoration site in Orange County, Virginia in association with the Farm Bill.

During the first two weeks of October, 1993 Refuge Manager Milton and Maintenance Worker Boska spent most of their time preparing a wetlands restoration site in Ruckersville, Virginia.

In February 1994, Refuge Manager Milton met with Bridget Constanzo from the Virginia Field Office on site for new marsh rehabilitation projects this month. Snow forced cancellation of several meetings.

On February 3, 1994 Maintenance Worker Boska and Intern Collin Smith visited the wetlands restoration site in Ruckersville, Virginia. They assessed damage to the water control structure and seeded the impoundment. The site will be repaired when weather conditions permit.

Biologist Melvin traveled to Charles County on April 4, 1994 to inspect a potential FmHA easement which would be managed by Mason Neck NWR. Bio Melvin met with Laura Mitchell (CBFO), Norman Melvin (SCS) and Dean Detwyler (FmHA acting supervisor) to delineate the boundaries and note significant wildlife resources found on the property.

The refuge staff reviewed several of the wetland restoration sites constructed during the last three years on May 13, 1994 including the Sanderson and Grace projects.

September 7, 1994 Refuge Manager Milton traveled to LaPlata, MD to look over the Cooke property, a FHA property. It's a very nice property overlooking a relatively undeveloped swamp. Two parcels would be involved if the Service takes an easement. One is very clean, but the second could have some problems as they wish to retain several special privileges. Time will tell.

3. Other - Nothing to Report

D. PLANNING

1. Master Plan - Nothing to Report

2. Management Plan

Corrections were made to the Public Use Plan and resubmitted to the Regional Office October 29, 1993.

Milton worked on a Compatibility Study for Mason Neck during August in 1994.

3. Public Participation

In 1993, ORP Schultz attended the January 19 meeting for Fairfax Audubon Society. She discussed volunteer opportunities and the upcoming refuge field trip. Staff make an effort to visit the group each quarter to maintain relations. She also attended their April 20 meeting to update them regarding status of the Woodbridge Army Research Facility and their last meeting of the year. The meeting featured the installation of next year's officers, awards to winners at local science fairs, and honoring member's efforts. Refuge volunteer Sue Wybraniec took volunteer of the year for her work with the Mason Neck wood duck program.

On April 27, 1993 Refuge Manager Milton attended the Friends of Mason Neck meeting to update them regarding the status of the Woodbridge Army Research Facility. James Waggener, part-time refuge volunteer, spoke to the group about his bird studies at the facility and on Marumsco NWR.

ORP Schultz attended a May 17, 1993 meeting of the Manassas Chapter of the Virginia Native Plant Society. She was able to make a small presentation about the purpose of Mason Neck NWR, plans to work with GarField High School studying Marumsco NWR, and the need for volunteers to conduct surveys or help with GarField's studies.

On June 9, 1993 ORP Schultz attended the Gunston Manor Home Owner's Association meeting to talk with them about recent happenings and to invite them to tour refuge facilities this fall as a group outing. Through planning between Refuge Manager Milton and ORP Schultz, focus of the contact was on working together as a community and improving communications. The refuge voiced willingness to help with their concern about a bike path and the community expressed interest in possible forest management on the refuge and assisting in qualitative data collection relating to management practices and their impact on adjoining lands. This is the first wedge into the community since the hunt controversy and the manager anticipates much closer communications as a result. As a follow up, on October 16 ORP Schultz conducted a tour of Mason Neck NWR for members of the Gunston Manor Civic Association to orient them to management programs and follow up on staff efforts to improve channels of communication with the community. Only three participated but they included the president and secretary of the association with the president also representing the Federation of Lorton Communities. They were most apologetic for the limited numbers and felt they had not kept up with the refuge's efforts to communicate. Another tour will be scheduled in the spring.

On October 13, 1993 ORP Schultz attended the Friends of Mason Neck meeting at Gunston Hall. She updated the group regarding current management programs, supported Mason Neck State Park's announcement of joining in the refuge deer hunt, and then participated in historical discussions about the group and area.

On October 19, 1993 Refuge Manager Milton attended the Mason Neck Citizen's Association to discuss current management activities, field questions, and show support as the Mason Neck State Park announced its initiation of deer hunting in conjunction with the refuge's management hunt.

In January of 1994 Refuge Manager Milton participated in the Advocacy training in Amherst. The course covered what the Service can do to further it's agenda through the use of the public. This was excellent training. Dr. Ed Mahoney from Michigan State University was the presenter. This course was followed by one on alternate funding.

Biologist Melvin gave a presentation/review of the High Point Creek permit application at a public hearing held at the Walt Whitman High School on September 21, 1994. Members of the Fairfax County Wetlands Board, representatives from the Virginia Marine Institute of Science (VMIS) and interested citizens were in attendance. Melvin reviewed the management objectives for the freshwater impoundment, construction and installation procedures for installing the new water control structure, and measures to be taken to minimize site disturbance.

Biologist Melvin attended the Woodbridge Research Facility Restoration Advisory Board (RAB) meeting held October 1994. The purpose of the RAB is to promote community involvement by giving the public the opportunity to review and comment on the Army's progress in the contaminant clean-up of the WRF. The RAB is composed of

Federal (USFWS, ARMY and EPA), State (DEQ) and county (PWC) governmental liaisons and community representatives. The government liaison will be the base transition coordinator for WRF (Todd Waltemyer) and the community liaison was voted to be Cynthia Pruett (former consultant for IBM). Biologist Melvin will serve as the USFWS government liaison and will attend future meetings and provide technical assistance.

In 1994, Biologist Melvin attended several meetings relating to the acquisition of the Woodbridge Research Facility and formation of citizens groups involved in the process. Meetings attended included Friends of the Woodbridge Refuge (FOWR) on November 9 and 29, Restoration Advisory Board (RAB) on November 14 and the Woodbridge Refuge Committee (WRC) formerly Woodbridge Reuse Committee on November 15. Melvin also developed a pie graph to illustrate how the various organizations will be working with the FWS in the development of alternative uses of the WRF. Melvin attended WRC meetings on December 2 and 8, FOWR meetings on December 19, and BRAC contaminants cleanup meeting on December 7.

Secretary Babbitt and his wife Harriet requested a private "birding" tour of the Woodbridge Research Facility on an early Sunday morning on September 11, 1994 as an introduction to the site and controversy. Biologist Melvin, Refuge Manager Milton and volunteer Stan Gray accompanied the Secretary and his wife on a three hour private bird walk of the WRF.

In November 1994, Biologist Melvin accompanied Jim Waggener (PWNRC) and Charlie Creighton (Friends of Mason Neck/Volunteer) on a site visit with two brothers of the Dawson family who previously lived on the WRF before it was acquired by the military. The Dawson brothers provided some interesting historical input about earlier land use practices on the facility, primarily dairy farming.

Woodbridge Research Facility Reuse Committee met several times in January 1994. Refuge Manager Milton and Biologist Melvin attended all of the called meetings. The committee is seeking Funds from the Army to further their desires to get the property into private hands.

The Mason Neck Overlay Committee, a creature of the Fairfax County government, was started in May of 1994. This committee is to attempt to come to grips with future development of the area regarding how to best preserve the atmosphere of the area and still allow development. The product may be a historical overlay district to protect the Neck.

Several individuals supporting the Service getting the Woodbridge Research Facility have begun to work with Congress to put the transfer of the WRF into the *appropriations bill* for the army for 1994. Refuge staff have been working with the staffs of Senator Warner and Congresswoman Byrne staff to at least get good language in the bill if this can

happen. Final language transferring the Woodbridge Research Facility to the Service was passed in bill HR 4453. The language stated that the entire property would be transferred to the Service in its entirety with a caveat stating that the Secretary of the Interior would provide "appropriate public access.... and work with the Woodbridge Reuse Committee to plan additional usage, including an environmental education center."

On June 23, 1994 Refuge Manager Milton and Biologist Melvin gave a tour of the WRF to Allen McReynolds, special assistant to the Secretary of Interior. McReynolds was not in full support of the facility being transferred to the Service in its entirety. The objective of the tour was to demonstrate to McReynolds the ecological significance of this site for wildlife protection with emphasis towards the need to protect early successional habitats for neotropical birds. Other attendees included in the half day van tour included Dan Sakura (Special Assistant to Assistant Secretary Frampton), Dr. Cherry Keller, (research biologist specializing in neotropical bird management at Patuxent WRC), Bill Takaoski (Special Assistant to Under Secretary of the Army), Todd Waltemyer (Base Transition Coordinator for WRF) and Jeff Donohoe (Reality Division WO).

Secretary Babbitt, Senator Robb, Congresswoman Byrne, Director Beattie and their accompanying press corps visited HDL on August 17, 1994 in the rain. Despite the weather, the area looked very nice and had good press coverage.

The Woodbridge Research Facility in Woodbridge, Virginia conducted their closing ceremonies on September 16 1994. The Service was not invited to attend the ceremony.

4. Compliance with Environmental Mandates - Nothing to Report

5. Research and Investigations

In May of 1994 Jim Wilgenbusch, graduate student from George Mason University submitted a revised research proposal entitled "Differential Survivorship of Juvenile Snapping Turtles Based on Hatchling Size". A Special Use Permit (# 51610-19a) was issued.

Other Study topics-

- 5111610-20 Comparative Study of High Point and Thompson Creek on Mason Neck Peninsula by Aileen Rogers
- Calling Station Fidelity of Male Green Frogs March 1995
- Comparative Analysis of Two Meadow Katydid Hybrid Zones July 1993
- Differential Survivorship in Juvenile Snapping Turtles May 1994
- Comparative Demography of Introduced *Trachemys scripta* and Potential for Reserves Overlap with Native Turtles July 1993

6. Other

In June of 1994, regional archaeologist Wilson visited two sites on Mason Neck to clear them for the new parking lot and additional yard space at the shop. Additional work will be required at the shop as a projectile point was discovered in one of the pits.

E. ADMINISTRATION

1. Personnel

- Gregory Weiler, Refuge Manager, GS-13, EOD 11/23/97 from WASO, Arlington VA, PFT VA
- J. Frederick Milton, Refuge Manager, GS-12 effective 9/19/93, EOD 1/3/88, PFT, transferred 0/28/97 Realty, Arlington,
- William H. Schaff, Refuge Operations Specialist, GS-9, EOD 8/11/91, PFT, transferred 6/27/93 to Quivera NWR
- Caroline Sanderson, Refuge Operations Specialist, GS-9, EOD 5/1/94, PFT, resigned 8/5/97
- Debbie Melvin, Wildlife Biologist, GS-9, EOD 7-28-91, GS-11 effective 4/17/94, PFT, transferred 7/28/96 to Parker River
- Yvonne M. Schultz, Outdoor Recreation Planner, GS-9, EOD 10/30/83, PFT
- Barbara Mitchell, Secretary, GS-5, EOD 12-14-80, GS-6 effective 5/1/94, PFT
- Stephen P. Boska, Maintenance Worker, WG-8, EOD 8/26/90, PFT

Training, Travel, and Meetings:

1. Spring 1993 Biologists Regional Workshop - Melvin
2. The staff hosted a going away luncheon for ROS Schaff on June 21. His last day was June 26. His knowledge and enthusiasm will be sorely missed.
3. On June 23, Refuge Manager Milton, ORP Schultz, and Maintenance Worker Boska attended training at Manassas in use of the government VISA cards. These cards should simplify many purchases and speed vendor payment.
4. Sept. 24-29 Outdoor Recreation Planner Schultz attended the North American Association of Environmental Educators Conference in Big Sky, Montana
5. October 31, 1993 Biologist Melvin went on maternity leave
6. On January 10, Collin Smith, a student from Eastern Kentucky University in Tennessee began his 16 week internship at the Refuge. Collin worked mainly on biological projects but assisted Maintenance Worker Boska with various tasks on the Refuge. Collin's major project during his internship was the removal and relocation of the wood duck nesting boxes on Mason Neck.

7. Biologist Melvin received a grade increase to a GS-11 effective April 17, 1994 due to an accretion of duties associated with the acquisition of the Woodbridge Research Facility and through the demonstration of increased work performance.
8. Biologist Melvin attended Associate Manager Tom McAndrews retirement party on April 28 which was held at Don Young house. Biologist Melvin was in the Amherst area to attend a wedding.
9. Biologist Melvin was selected to participate with the Migratory Bird Management waterfowl banding program in western Canada in August, 1994. Scheduled to depart in late July and return in early September, plans had to be changed when Biologist Melvin went out on medical leave for the first part of the month due to an unexpected medical emergency. A volunteer/intern at Iroquois NWR was able to fill in at the last minute. Melvin delivered the Dodge Ram 4x4 to Iroquois which will be used in the Canada Banding program during August. She returned to work with no further restrictions or limitations on August 8.
10. Biologist Melvin attended the Biologist Workshop at the Patuxent WRC in Laurel, MD from September 6 through 9, 1994. ROS Sanderson attended one of the sessions dealing with Wildlife Inventory techniques used for monitoring neotropical migrants and other passerine species.

2. Youth Programs

ORP Schultz participated as a speaker in two career days. On March 6, 1993 she spoke at Thomas Jefferson High School's Seventh Annual Science for Women. About 75 students and adults attended her session, including several other presenters who were curious about all the field gear Schultz brought. On March 27, 1993 Schultz spoke at the career day put on by the Manassas Chapter of American Association of University Women. Schultz spoke to three sessions of students, one for parents, and initiated a session for educators before power went out in the school and all activities had to be terminated.

ORP Schultz attended a luncheon for the mentor program at Thomas Jefferson High School on April 28, 1993. Her guests were Claire Cassel from Office of Training and Education and John Brooks from Law Enforcement in the Washington Office. The Washington Office expressed interest in the Thomas Jefferson program as a model for their adoption program with Eastern High School.

ORP Schultz met with boy scouts on April 21 and 29, 1993. Both are being asked to work on the rehabilitation of Great Marsh Trail to fulfill their requirements for eagle scout. On May 22, boy scout Dan Hoke supervised a work party on Great Marsh Trail extending the side boards and graveling the surface for handicap access. His project was in fulfillment of his eagle scout award.

ORP Schultz met with eagle scout candidate Jack Hartman on May 25 to discuss project options. He chose rehabilitating and rain coating all wooden structures (benches, boardwalks, bridges, and overlooks) on Woodmarsh Trail. Schultz also had the opportunity to talk to Jack's mother and brother about referring other scouts to the refuge for eagle projects, scouts adopting portions of the refuge for maintenance, and possible Order of the Arrow projects with participants staying at the nearby regional park campground for the camping facet of the award.

ORP Schultz met with eagle scout candidate Jack Hartman on June 17, 1993 to discuss his project to raincoat and repair all wooden facilities (boardwalks, overlooks, and benches) on Woodmarsh Trail. His project will start in August.

Eagle scout candidate Andrew Dries supervised work parties on Great Marsh Trail on June 25 and 26. They spread gravel on 65 feet of trail and added over 100 feet of board lining.

Requests for projects by candidates for the level of Eagle Scout came pouring during July 1993 as ORP Schultz met with 4 different scouts about rehabilitation of the Great Marsh Trail while other scouts expressed interest in wood duck nest box construction and repairs on the Great Marsh Trail kiosk and overlook.

Patuxent's Office of Migratory Birds contacted the refuge about disposal of a display. OMB is supplying to the Boy Scout Jamboree at Fort A. P. Hill. The display is of plants attractive to birds. The refuge was interested but due to non-native plants being included in the collection, the refuge will try to find a school or agency with other exotics as a more suitable site to receive the plants.

More eagle scout candidates discovered the refuge in August 1993. Two scouts, Mike McNiff and Mike Hamilton, continued the refuge's rehabilitation of Great Marsh Trail while a third, Ryan Schultz, came in for an orientation in August and has scheduled his work sessions in September. The two "Mikes" had some problems with the quality of their work and ORP Schultz had to meet with them to review their work. Hamilton corrected his section but McNiff has refused to meet our requirements and this will be reflected in our response to his eagle scout committee. Work parties were scheduled on the Great Marsh Trail for the weekends of September 18 and 25 and on the weekends of October 16-17 and October 23-24.

In March, 1994 Biologist Melvin participated in the Manassas High School "Women in Math and Science" career day by giving several presentations on the various career opportunities for women in the Fish and Wildlife Service. The title of the presentation was "Working in the Mud and Loving It".

3. Other Manpower Programs - Nothing to Report

4. Volunteer Program

Schultz attended a meeting of Fairfax Audubon Society program coordinators on January 21, 1993. Each supervises a phase of their volunteer efforts. Schultz reviewed prior successes and problems, then discussed upcoming opportunities. Kim Creighton will be the new coordinator for rehabilitating Great Marsh Trail. She came out on January 23 and February 15 for orientation tours and seems willing to do all the contact and supervision needed to get volunteers back to modifying the trail for handicap use. This project has been ongoing since 1988. In May, Fairfax Audubon Society trail coordinator Kim Creighton supervised a work party of eight students, their parents, and two teachers on Great Marsh Trail. They were continuing the ongoing project of making the trail handicap accessible.

Biologist Debbie Melvin helped conduct a joint agency bald eagle survey training session at the Mason Neck State Park visitor center on January 21, 1993. Volunteer Larry Brindza gave the main portion of the program with refuge and state personnel explaining the volunteer process. About 12 people came. More than 80 were invited.

Fifteen volunteers assisted Biologist Melvin with a nest count in the heronry on January 23, 1993.

Besides their normal eagle survey and trail rover duties, volunteers assisted in several programs in February of 1993. On February 17, volunteers Charlie Creighton, George Ivey, Carol Wuerl, and Ed Thornburg assisted refuge and state game department staff with collaring Canada geese on a nearby horse farm. On February 20, Parkside Middle School Science Club supplied 13 students and 5 adults to plant loblolly pine seedlings. They spent 3.5 hours planting 650 trees along the bluffs at the end of Sycamore Road and in a gypsy moth devastated area near the end of Anchorage Road. On February 25, 8 boys and 2 adults from the Prince William County Group Home for Boys assisted staff in completing the pine reforestation by planting over 400 trees on Woodmarsh Trail.

In June, 1993 the refuge purchased the update to the Triggs Volunteer Program. This dbased computer program should improve tracking of volunteer services and better utilization of available skills and interests.

Volunteers were active in July, 1993. Besides their routine eagle and general bird surveys, they also assisted Biologist Melvin in a heron colony survey and a Canada goose round-up. Details are included in the wildlife section of this report.

One volunteer, enthused about checking wood duck boxes and frustrated about searching for hidden boxes, tried simplifying his task by spray painting big arrows to the boxes as directions for future surveyors. Staff explained that this kind of marking was inappropriate and suggested consulting with their coordinators in the future. No more problems have occurred.

In August, 1993 ORP Schultz submitted six position descriptions to the Prince William County Volunteer Program. One applicant called about the office aide position but has not called back.

FONZ (Friends of the National Zoo) conducted their fifth annual beach cleanup on September 18, 1993. Despite heavy rain showers, the work party collected 1,806 pieces of litter weighing a total of 510 pounds. Foamed plastic made up the bulk of the litter in more ways than one with 994 pieces followed by other plastics at 509 pieces.

April 4, 1994 was volunteer /intern Collin Smith's last regularly scheduled day at the refuge. Collin spent the last three months working with Biologist Melvin on a variety of wildlife and maintenance related projects. Collin's primary contribution to the Refuge was in the relocation and enhancement of the Refuge's wood duck nesting boxes. The staff had a farewell luncheon for Collin at a local restaurant in Occoquan.

John Hartman, volunteer/intern started on May 18, 1994. John worked with Biologist Melvin on a variety of wildlife censuses and maintenance projects. John recently completed his under graduate degree from the College of William and Mary. His last day was June 10, 1994. John was selected for a position with the local water board. John's assistance with the biological program will be missed.

5. Funding

<u>Fiscal Year</u>	<u>Appropriation</u>	<u>Source</u>
1988	\$281,000	1260
1989	\$243,000	1260
1990	\$222,000	1260
1991	\$219,000	1260
1992	\$263,000	1260
1994	\$321,000	1260
1995	\$299,000	1260
1996	\$319,000	1260
1997	\$278,900	1260

6. Safety

Five staff and one volunteer participated in an all-day ATV safety training session on March 1, 1993.

ORP Schultz taught a first aid and CPR class for four staff members on March 16, 1993.

On July 28, 1993 members of the local Fairfax County fire station conducted their annual inspection of the maintenance shop and compound. No violations were noted.

On October 9, 1993 while posting signs at the Fairfax Rod and Gun Club for the hunter orientation and range sessions, Biologist Melvin's new truck was struck by a vehicle being operated by a volunteer en route to assist her at the range. He didn't see her "because he was watching the ducks." Fortunately, no one was injured but the cab and side panels of her truck were badly dented. The volunteer's insurance company was very cooperative and arranged for repairs.

In May 1994, Maintenance worker Boska successfully completed the Boating Basics Safety Course.

Staff took part in training to recertify with CPR on May 19, 1994. Biologist Melvin's brother-in-law, Joe Melvin, who is a local paramedic taught the day-long course.

In June, 1994 refuge staff had on-hands fire extinguisher training with a fire pit at the maintenance shop.

7. Technical Assistance

On January 26, Manager Milton and ROS Schaff attended a wetland restoration meeting to discuss Partners for Wildlife, private land restoration plans, and projects for 1993.

On January 5, 1993 a gentleman claiming to own the last dairy farm in Fairfax County called to ask for suggestions about his deer problem. He is surrounded by Nature Conservancy land, Northern Virginia Regional Park land, a county water treatment facility, and very expensive home sites and the area harbors a very high deer population. Staff told him the regional park had been consulting with the refuge and that staff would be glad to share their knowledge and experiences if the farmer and his neighbors met about the problem. He will be getting back with the refuge.

ORP Schultz assisted Marian Lobstein with an overview tour of Great Marsh Trail on April 29, 1993. Marian is a botany professor at the Northern Virginia Community College campus in Manassas and is scheduled to give a tour of the trail for The Nature Conservancy's annual chapter meeting on May 1.

On September 27, 1993, Mason Neck State Park requested assistance in moving several large brush piles in their phase II area. Maintenance Worker Boska was able to assist them by using the refuge dozer to move the piles.

Refuge Manager Milton began duties as a team member of the Technical End-User Committee. This committee has been charged with surveying the needs of the region in ADP and Software areas.

Biologist Melvin participated in the Atlantic Flyway Waterfowl Wing-bee at the Patuxent Wildlife Research Center in Laurel, Maryland during the week of January 24 through 28,

1994. At the request of the Section Chief, Migratory Bird Harvest Surveys, Melvin took 1 week in the summer to study the wing collection at the Center and take the required wing tests to become one of the "official" checkers during the wing-bees.

Refuge Manager Milton traveled to Williamsburg to attend the Partners in Wildlife conference sponsored by the Virginia Area Field Office to start working with the State Agencies with focus on various aspects of non-game species and wetlands restoration.

On March 15, 1994 Biologist Melvin and Intern Collin Smith attended the Wildlife Inventory Database Workshop held at Eastern Neck NWR. Zone Biologist Hal Laskowski hosted the one day workshop to solicit input into the development of a regional wildlife inventory database for refuges.

Biologist Melvin attended the Ecological Services Biologist Workshop during the week of March 28 through April 1. Melvin was invited to participate in the 5-day workshop by the Chesapeake Bay Field Office in Annapolis. The workshop provided an excellent opportunity to exchange information, expand professional contacts, and learn more about Ecological Services.

In April, 1994 RM Milton talked with Christen Nelson, Rocky Mountain Arsenal about potential deer problems and how Mason Neck had worked to solve problems here. They have lots more problems than Mason Neck does with the very dangerous contaminated areas on that property.

Biologist Melvin assisted U.S. Forest Service Forest Pest Management personnel in calibrating the helicopters used in the gypsy moth suppression project at Mason Neck and at Quantico Marine Base in Triangle, Virginia. Calibration occurred on the Base.

Biologist Melvin went to the Patuxent WRC Harvest Surveys on December 14-16, 1994 to review the waterfowl wing collection in preparation for the January Atlantic Flyway waterfowl wingbee in which she will serve as a wing checker. Melvin had to take several practical exams and achieve greater than 95% on each.

Zone Biologist -South Laskowski invited Biologist Melvin to participate in a review of the wood duck database program developed by biologist Jim Kelly of Patuxent WRC. Melvin, Laskowski and several other biologist's from R5 who have an active wood duck box management program traveled to Patuxent on December 20, 1994 and receive a demonstration of the database. Several revisions would have to be made in order for the program to be useful for field stations.

On December 21, 1994 Biologist Melvin participated in an aerial waterfowl survey of Chincoteague NWR with Pilot Biologist Ferguson from Patuxent to gain aerial flight survey experience. Melvin hopes to participate in the Atlantic Flyway Seaduck survey later this winter.

8. Other Items

On January 19, 1993 Refuge Manager Milton and ROS Schaff donated blood for Fairfax County Animal Control Officer who was shot while conducting law enforcement activities checking deer hunters.

May 5 and 6, 1994 marked the beginning of the ecoteam management approach in Region 5. All project leaders met in Fairfax County near the Dulles Airport to began the process. The various teams were created and began to work on the process by which they would transform the Service to work on the watershed level. The second meeting of teams was at Patuxent NWR on May 23 and 24, followed by Chincoteague NWR on 2 June. On June 7 through 8 and July 13 through 15, the Chesapeake Bay/Susquehanna River Ecoteam met in Annapolis to start working on the outputs requested by the regional office. These were long meeting with lots of projects and other good things to work through.

F. HABITAT MANAGEMENT

1. General - Nothing to Report

2. Wetlands

In January 1994 Biologist Melvin submitted a Ducks Unlimited (DU) MARSH proposal requesting matching funds to install/replace a water control structure at the High Point Creek impoundment and to raise the existing earthen dike.. The proposal requested a 50/50 matching grant for \$5,000.00. In April, Biologist Melvin and Refuge Manager Milton inspected the High Point Creek dike and old water control structure to determine the size needed for the new water control structure to replace the existing structure. The existing pipe was originally set above the mean pool bottom elevation. A 36" water control structure was purchased from Calhoon Farms in and Tennessee delivered on May 23. Biologist Melvin and volunteer Hartman used the canoe and transit level to document the mean pool bottom elevation of the High Point Creek marsh to determine the exact depth at which to set the new structure. Biologist Melvin met with Richard Yee, Regional Engineer on June 6 to inspect the site at High Point Creek. Mr. Yee discussed several alternatives to secure the structure to prevent float and various methods to minimize site disturbance. On July 7, Biologist Melvin met with Connie Crawford, Chair for the Fairfax County Wetlands Board and Jeff Madden, VIMS, to inspect the site. On July 25, Biologist Melvin completed the required addendums for the water control structure permit and delivered it to the Fairfax County Wetlands Board. On September 17, Biologist Melvin conducted a site visit for members of the Fairfax County Wetlands Board who were reviewing the wetland permit application. The Board was satisfied with the proposed construction and management objectives for the impoundment. In October, 1994 a private contractor , McDowell Associates, with assistance from Maintenance

Worker Steve Boska and Biologist Deborah Melvin installed the new water control structure (a 48" half round riser , 36" culvert pipe equipped with a tidal flap gate. It was set 1.67' below the existing structure to allow for enhanced water level management of the impoundment and complete draw down. After installation was completed, Maintenance Worker Boska and Refuge Operations Specialist Carol Sanderson hauled fill dirt and raised the level of the existing levee two feet, added rip rap and seeded the work site. Ray Whitmore, from Ducks Unlimited visited the High Point Creek impoundment and inspected the installation of the new structure with Milton on December 15, 1994. Ray officially approved the project even though it already had been completed in October.

In September 1994, wetland vegetation surveys were conducted by Biologist Melvin and volunteers from the Smithsonian and local schools in the High Point Creek impoundment.. Thirty permanent plots were established in 1993 and annual surveys using a modified version of the Daubenmire technique is used to calculate cover classes and midpoint ranges to determine relative abundance and frequency. Data will be entered into the VEGDATA base program developed by ZB-S.

3. Forests

In January, 1993 several days were spent by ROS Schaff and Maintenance Worker Boska clearing experimental plots for seedling planting. This is part of the upcoming Forest Management Plan.

In February, Biologist Melvin completed the draft Gypsy Moth Suppression contract for FY 1994. The Refuge is proposing to treat approximately 1,400 acres of upland forest using an aerial application of *Bacillus thuringiensis* (B.t.)

In August, 1994 Biologist Melvin began monitoring the erosion along the High Point bluffs by instructing two volunteers to set out 13 stakes, 50 feet from the existing bluff edge to document the amount of bank loss each year. Some areas along the southern edge of the Mason Neck peninsula lost over 10 to 15 feet of bank during the year.

4. Croplands - Nothing to Report

5. Grasslands

Delayed by staff shortages and offsite details, maintenance worker Boska started mowing on August 6, 1993 of major tracts on Sycamore Road, Anchorage Road, and around the shop but had to stop due to hydraulic line failure on the John Deere tractor. Further mowing has been delayed so that the refuge can make maximum use of the cookie cutter in High Point Creek while we have it on loan.

On February 16, 1994 Biologist Melvin attended a one day workshop sponsored by the Virginia Department of Game and Inland Fisheries at the Quantico Marine Base. The

workshop focused on how landowners can use prescribed burns for grassland management.

Seasonal mowing was initiated September 20, 1994 but put on hold, pending completion of a wetlands rehabilitation project in Ruckersville, Virginia.

6. Other Habitats - Nothing to Report

7. Grazing - Nothing to Report

8. Haying - Nothing to Report

9. Fire Management

In January, ROS Schaff reviewing Mason Neck's NUS supplies and ordered supplies and equipment for the 1993 fire year.

June 1993 Maintenance worker Boska attended training on chainsaws and fire pumps at Great Dismal Swamp from June 7 through June 11.

10. Pest Control

In January, 1994, funding was approved from the U. S. Forest Service, Forest Pest Management Division to conduct a gypsy moth suppression program on the Refuge this fiscal year. The Refuge will aerially apply Bacillus thuringiensis to control gypsy moths on 1,400 acres of upland hardwood forests. On April 27, 1,148 forested acres at Mason Neck NWR received a single aerial application of the biological control agent *B. t.* (Bacillus thuringiensis) at an application rate of 24 BIU's per acres. The U. S. Forest Service provided not only the technical assistance but provided staff to assist in marking spray blocks and the collection of environmental factors during the spraying operation. Unfortunately the Refuge experienced an unexpected heavy downpour latter that day. The rain event lasted only minutes but deposited over 1.5" of rain. The rain event occurred several hours after the completion of the spray operation which hopefully was long enough for the majority of the gypsy moth larvae to ingest the pesticide before it was washed off the foliage. On August 16 and 19, personnel from the U.S. Forest Service, Forest Pest Management office from Asheville, North Carolina conducted gypsy moth egg mass surveys on the Refuge. Sixty semi-permanent plots on Mason Neck and 6 new plots on Featherstone were examined. The preliminary results of these surveys and the post treatment evaluation indicate that gypsy moth population levels have increased in the areas adjacent to the 1994 treatment blocks. The area around the maintenance shed and portions of Featherstone NWR may be recommended for further treatment in 1995.

In October 1994, Biologist Melvin sent the gypsy moth accomplishment report to the WO for FY 94. Approximately 1, 148 acres were treated with *B.t.* in April. Total costs

incurred during the FY 94 gypsy moth suppression program totaled \$21,583. The Refuge received funding for the project through an interagency cooperative agreement with the U. S. Forest Service Forest Pest Management Office.

In November of 1994, Biologist Melvin submitted a proposal to participate with the Virginia Department of Agriculture and Consumer Services Gypsy Moth Suppression Program in FY 95. Since the Refuge is proposing to treat a relatively small area, (< 170 acres), the U. S. Forest Service recommended that the Refuge cooperate with the State instead of contracting a separate suppression project.X

FOREST PEST MANAGEMENT ACCOMPLISHMENT REPORT FY94 (USFS)

<u>USDI Agency:</u>	U. S. Fish & Wildlife Service	
<u>Dist/Res./Park:</u>	Mason Neck National Wildlife Refuge	
<u>State:</u> Virginia	<u>Forest Service Region:</u> Region 8	<u>Fiscal Year:</u> 1994
<u>Pest Controlled:</u>	Gypsy Moth	

<u>I&D Presuppression/ Operational Survey</u>	\$ NC /acre	Cooperative agreement with Forest Service
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<u>I&D Suppression</u> using Biological methods	\$ 8.62/acre +\$540 pre-flight	1,148 acres treated with a single application of <i>B.t.</i> Total (\$10,435)
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<u>I&D Prevention/Suppression</u> using Silviculture/Mechanical Methods	\$ NC/acre
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On April 27, 1994, 1,148 forested acres of the Mason Neck National Wildlife Refuge received a single aerial application of the biological control agent *B.t.* (*Bacillus thuringiensis*) at an application rate of 24 BIU's per acre at no less than 64 oz. per acre.

Results of the fall 1994 egg mass survey indicated significant reductions in egg mass densities throughout most of the treatment areas. However, a few small pockets with densities exceeding acceptable levels have been identified and a follow-up treatment may be necessary to prevent further defoliation and tree mortality.

ADDENDUM TO FOREST PEST MANAGEMENT ACCOMPLISHMENT REPORT

Pre-flight aerial observation	540.00
Aerial contractor fee	9,895.76
Suppression project supplies/services	10,885.36
Ballooning/marketing equipment	<u>262.00</u>
	\$21,583.12

From: Deborah Melvin @ R5RW_MSNNWR
 To: Sean Furniss @ 9AR~RW
 Subject: FY 95 Forest Pest Management Report

DOI Agency Name	U. S. Fish and Wildlife Service	
Unit Name	Mason Neck National Wildlife Refuge	
Forest Service Region	Region 8	
Fiscal Year	FY 1995	
Pest Controlled	Gypsy Moth	
Activity	Amount Spent	Acres Treated
Insect & Disease Presuppression /Operational Survey	\$ NC /acre	Cooperative agreement w/ Forest Service
Insect & Disease Prevention/Suppression using Biological Methods	\$ NC /acre	Cooperative agreement w/ Forest Service
Insect & Disease Prevention/Suppression using Chemical Methods	\$ 13.89/acre Total \$ 1,666.80	120 ac treated w/ single application <i>B. t.</i>
Insect & Disease Prevention/Suppression using Silvicultural/Mechanical Methods	\$ NC /acre	Cooperative agreement with Forest Service
Narrative Description of Accomplishments (Note: Cell will expand to fit text)	On May 3, 1995 at approximately 1300 hours, 120 forested acres of the Mason Neck NWR received a single application of <i>Bacillus thurengensis</i> at an application rate of 24 BIU's per acre. Preliminary results from the 1995 fall egg mass surveys revealed virtually no significant densities of egg masses on any portion of Mason Neck NWR. It is unlikely that follow-up treatment will be necessary for the following season.	

ADDENDUM TO ABOVE REPORT:

Payment to Virginia Cooperative Gypsy Moth Suppression Program:	\$1,666.80
Suppression project supplies & services:	<u>\$2,833.20</u>
TOTAL:	\$4,500.00

11. Water Rights - Nothing to Report

12. Wilderness and Special Areas - Nothing to Report

13. WPA Easement Monitoring - Nothing to Report

G. WILDLIFE

1. Wildlife Diversity - Nothing to Report

2. Endangered and/or Threatened Species

Virginia Bald Eagle Nest Success and Productivity 1977-1997 (VDGIF Report 7/24/97)

Year	Occupied Territories	Active Nests	Successful Nests	Young	Nest Success (%)		Productivity		
					Successful/ Occupied	Successful/ Active	Young/ Occupied	Young/ Active	Young/ Successful
1977	33	31	13	18	39.4	41.9	.55	.58	1.38
1978	37	36	14	18	37.8	38.9	.49	.50	1.29
1979	37	34	15	20	40.5	44.1	.54	.59	1.33
1980	38	35	23	35	60.5	65.7	.92	1.00	1.52
1981	41	39	26	40	63.4	66.7	.98	1.03	1.54
1982	48	45	27	40	56.3	60.0	.83	.89	1.48
1983	54	52	30	51	55.6	57.7	.94	.98	1.70
1984	61	60	34	57	55.7	56.7	.93	.95	1.68
1985	65	65	47	84	72.3	72.3	1.29	1.29	1.79
1986	68	68	43	83	63.2	65.2	1.22	1.26	1.93
1987	73	73	60	107	82.2	82.2	1.47	1.47	1.78
1988	80	80	64	118	80.0	80.0	1.48	1.48	1.84
1989	92	92	53	88	57.6	57.6	.96	.96	1.66
1990	106	104	75	142	74.3	75.8	1.41	1.43	1.89
1991	113	110	92	153	81.4	83.6	1.35	1.39	1.66
1992	132	131	83	141	63.4	63.8	1.08	1.08	1.70
1993	149	149	99	172	66.4	66.4	1.15	1.15	1.74
1994	164	144	94	158	57.7	65.7	.97	1.10	1.68
1995	176	154	124	223	71.7	82.1	1.29	1.48	1.80
1996	200	180	135	243	67.5	75.0	1.22	1.35	1.80
1997	227	213	169	321	74.4	79.3	1.41	1.50	1.89

Active nest totals include nests of unknown outcome in 1990 (5), 1992 (1), 1994 (1), 1995 (3), and 1996 (3). Nest success and productivity are based on nests of known outcome only.

On May 18, 1994, Craig Koppie, Wildlife Biologist, Chesapeake Bay Program in the Annapolis field office in Maryland, banded four bald eaglets on Mason Neck and Featherstone NWR's and at Powells Creek.

<u>BAND #</u>	<u>LOCATION</u>	<u>NEST TREE</u>	<u>APPROX AGE</u>
629-18060	Mason Neck, High Point	VA Pine	7 weeks

629-18061	Powells Creek/Cherry Hill	White Oak	7 weeks
629-18062	Powells Creek/Cherry Hill	White Oak	7 weeks
629-18063	Featherstone NWR/Neabsco	Chestnut Oak	7 weeks

All eaglets appeared healthy. The one eaglet at the Featherstone nest had some marks just above the beak and on the legs. Photos were taken and sent to Dr. Mitchell Byrd. No information to date. Prey items found in the nests included some mammal fur (raccoon and rabbit in the FRS nest) along with fish remains and mud turtle carapaces. One photographer from Washington Times was present at the HPC nest along with a volunteer from PXT (Larry Atkinson) and the principle from Gunston Elementary school.

Bald eagle banding activities for 1995 on and around Mason Neck NWR:

5/15/95:	High Point Creek nest: 2 eaglets banded (# 629-180-56 & 57)
	Gunston Manor nest: 2 eaglets banded (# 629-18058 & 66)
5/23/95:	Powells Creek nest: 2 eaglets banded (#629-18067 & 68).
5/26/95:	Featherstone nest: 2 chicks, 7 weeks old, band # 629-18069 & 70

Craig Koppie banded the eaglets assisted by Biologist Melvin and Keith Kline (VDGIF). While the bander was climbing the Powells Creek nest tree, all eaglets jumped out of the nest. Two were recovered and returned to the nest and banded. The third eaglet (if there ever really was a third) was not found after a seven hour search . Refuge volunteer Larry Brindza observed this nest for several months and observed only two eaglets. However Dr. Byrd conducted an aerial production survey and recorded three eaglets in the nest.

Summary:

Year	Nest Location	Eaglets Banded	Band Numbers	Sex(if Known)
1993	HPC	1	629-18046	?
1993	Powells Creek	3	629-18047-49	2f, 1m?
1993	Featherstone	1	629-18050	F ?
1992	HPC	2	629-18042	M
			629-18043	F
1991	HPC	1	629 18040	F
1990	HPC	3	629-18036	?
			629-18037	?
			629-18038	?
1989	HPC	no record		

Mason Neck National Wildlife Refuge Bald Eagle Survey Results

YEAR	NORTH				INTERIOR				SOUTHEAST				WEST			
	Adults		Subadults		Adults		Subadults		Adults		Subadults		Adults		Subadults	
	eagles	periods	eagles	periods	eagles	periods	eagles	periods	eagles	periods	eagles	periods	eagles	periods	eagles	periods
1987	-	0	-	0	0	35	0	35	10	37	10	37	0	25	0	25
1988	-	0	-	0	83	47	388	47	53	82	83	82	28	44	62	44
1989	-	0	-	0	144	5	297	5	91	145	156	145	21	26	51	26
1990	-	0	-	0	308	139	651	139	174	178	230	178	44	53	61	53
1991	-	0	-	0	361	117	644	117	87	131	135	131	40	60	50	60
1992	-	0	-	0	262	97	642	97	99	115	153	115	51	58	49	58
1993	-	0	-	0	224	73	472	73	97	127	95	127	38	45	53	45
1994	0	1	0	1	337	79	737	79	115	125	131	125	70	49	44	49
1995	53	27	109	27	448	80	862	80	152	112	170	112	118	52	123	52
1996	64	25	49	25	196	42	303	42	67	39	39	39	11	11	14	11
1997	64	24	106	24	243	57	581	57	97	64	119	64	40	24	45	24

NOTE: North = Pohick Bay & Fort Belvoir Southeast = Great Marsh Trail, Environmental Education Overlook, High Point Creek and Sycamore Point Landing
 Interior = Alternate Roost, Gunston Roost, Upper Kanes Creek West = Lower Kanes Creek, Belmont Bay Overlook

Average number of eagles seen at site during an observation period

Year	BBO		EEO		GMT		HPC		LKC		UKC		ARS		SYC		GRS		POH	
	Adult	Immat	Adult	Immat	Adult	Immat	Adult	Immat	Adult	Immat	Adult	Immat	Adult	Immat	Adult	Immat	Adult	Immat	Adult	Immat
1987	0	0	0	0	0.3	0.4	0.8	0.7	0	0	0	0	0	-	0	0	0	-	-	-
1988	0.7	1.3	0.5	0.8	0.4	0.8	1.1	1.4	0.6	1.5	2.3	10.1	0.2	2.4	0	1.5	-	-	-	-
1989	0	0	0.3	0.6	0.4	0.6	1.1	1.9	0.8	2.0	2.4	6.7	1.2	2.0	0.7	1.1	-	-	-	-
1990	1.3	1.8	0.3	0.5	1.0	0.8	1.1	1.9	0.7	0.9	2.8	6.4	1.5	2.8	1.2	1.5	-	-	-	-
1991	0.9	0.7	0.1	0.2	0.9	1.1	0.9	1.5	0.5	0.9	4.6	7.6	1.0	2.6	0.4	0.6	-	-	-	-
1992	1.6	1.1	0.3	0	1.0	0.7	0.9	2.4	0.3	0.6	4.2	9.3	1.1	3.8	0.8	1.0	-	-	-	-
1993	1.1	1.6	0.7	0.3	0.5	0.5	0.9	1.2	0.7	1.0	4.1	9.2	2.0	3.7	0.8	0.8	-	-	-	-
1994	1.1	0.9	0.8	0.1	0.8	0.5	1.2	2.8	1.7	0.9	6.3	14.0	2.1	4.2	0.8	0.7	5.4	12.2	0	0
1995	2.7	2.8	0.7	0.9	1.3	0.9	1.6	2.3	2.0	2.1	8.3	16.3	2.7	4.5	1.5	1.6	3.0	24.0	2.0	4.0
1996	0.8	1.0	-	-	2.3	1.5	1.5	0.6	1.1	1.4	6.0	9.1	2.4	3.5	1.0	0.7	6.3	10.5	2.3	2.0
1997	3.5	4.8	1.4	2.8	3.6	1.8	1.8	2.5	2.2	3.6	5.0	4.8	2.6	2.9	1.3	2.3	5.5	14.5	3.0	5.0

NOTE: Adult = mature birds Immat = subadult or immature

In January, 1993, while surveying areas of gypsy moth damage, ROS Schaff observed three bald eagles roosting in an area 300 yards up stream from the Kanes Creek roost site. This is more indication that the Kanes Creek roost is moving. One possible reason for this movement is the number and intensity of eagle monitoring conducted by Mason Neck State Park and its volunteers.

On October 14, 1993 ORP Schultz checked out a local citizen's report of an eagle nest on private land near the intersection of I-95 and Route 234. The resident could not locate the nest during the visit and the feathers found near the nest were turkey and owl feathers but the description of the nest and the white-headed, dark bodied, raptor parent makes the nest still a possibility. The resident was asked to mark the nest site after the leaves have fallen and recontact staff for a confirmation visit.

On October 15, Biologist Melvin and Maintenance Worker Boska responded on a citizen's report of an injured eagle along the Hallowing Point community. The eagle had been in the river and come ashore on some rock bulkheading though it returned to the water if approached by humans. Shooting was suspected since a waterfowl blind in the vicinity was active and the breast feathers were disturbed. After capture, Melvin and Secretary Mitchell transported the adult eagle to the Wildlife Center of Virginia in Weyers Cave, Virginia. The managing veterinarian, Dr. Porter, completed a preliminary survey and did not find evidence of a gunshot wound but did find the bird under weight. The bird was left with the understanding that if complications did not occur, the refuge would pick up the bird after rehabilitation and release it near the capture site.

Refuge Manager Milton completed a boat survey for eagles on October 20 with a conservative result of 37 eagles.

The 1994 Annual Mid-Winter Bald Eagle survey was completed by Biologist Melvin and volunteers on January 7. A total of 34 eagles (12 adults, 16 immatures and 6 unknowns) were observed during the one day survey. This number represents a decrease from last year's count of 45.

In February, 1994 a new nest was confirmed on Mason Neck on private property in the Gunston Manor residential development. The nest tree, a large loblolly pine, was located less than 100 yards from a private single family home. Two adults have been repeatedly observed carrying sticks and perching on the nest.

The Bluff Trail nest which was found last year (1993) but was not active, appears to be active this year. The adult pair have been frequently observed perched near or on the nest tree.

No February 1994 boat shoreline surveys were conducted due to the thick ice on the Potomac River which inhibited boat launching.

On February 8, 1994 Biologist Melvin and Volunteer Joe Saluinas mapped out the new bald eagle roosting site which has recently relocated onto the Gunston Hall Historic Plantation property . The new roost site is approximately one half mile north of the previous site which was located along the upper tributaries of Kanawha Creek. Preliminary assessments indicate that this site is the primary roost site on Mason Neck. The new roost site is situated at the mouth of a small drainage bordered on the east and west by two steep embankments. The site is also an area severely affected by gypsy moth damage. Over 90 percent mortality of oak species has been realized in this area.

On February 22, Biologist Melvin was interviewed by an Associated Press reporter from New York who was writing a national story about the status of the bald eagle in the United States.

On April 13, 1994 Biologist Melvin and volunteer Smith went out to conduct an eagle nest survey of the Refuge's newest eagle nest and instead found that the nest tree, nest and eggs (number unknown) had fallen over into the Potomac River. Bank erosion caused the nest tree to topple into the river. No eggs or young were recovered. Both adult bald eagles were observed in the area circling and vocalizing near the nest site.

Biologist Melvin met with Keith Kline, biologist with the Virginia Department of Game and Inland Fisheries to discuss the Refuge's role in monitoring and banding at the off-refuge bald eagle nest sites. Melvin assured Kline that the Refuge will continue to coordinate their activities through the State and the individual landowners when dealing with nests located off the Refuges.

On June 2, 1994, Refuge Manager Milton and Biologist Melvin were interviewed by an ABC news affiliate of the Herst Corporation. The interview focused on the recovery efforts for the bald eagle.

Refuge Manager Milton, Biologist Melvin and Dennis Shiflett (NWF) attended the bald eagle release/reclassification announcement of the status of the bald eagle by Director Beattie at Blackwater NWR on June 30.

Biologist Melvin assisted by volunteers Creighton, Thorsen, Zombrom and Vance installed an observation blind on the High Point Creek dike to be used for surveying eagles, waterfowl and other waterbirds utilizing the impoundment. The blind was donated and constructed by Fairfax Audubon volunteers.

During the August 24, 1994 boat survey, the jet motor blew a rod through the block and the survey was cut short. Biologist Melvin and volunteer Shiflett oared the boat to the shore (the nearest marina was only 40 minutes away) where Maintenance Worker Boska arrived with truck and trailer. The motor was purchased in 1993 and is still covered under warranty. Biologist Melvin has contacted OMC for instructions on warranty repair procedures.

Biologist Melvin joined a reporter from Fort Belvoir on a boat tour (piloted by a local waterman) on November 19, 1994. Reporter Sherman Hoque was completing a story on bald eagles in and around Fort Belvoir which includes the Mason Neck peninsula. Melvin provided population and life history information on the local bald eagle population in the area.

Summary of Reports for Boat Shoreline Surveys

Date	Ttl Eagles	Adult	Immature	Unknown	Comments
1/6/94	38	20	15	3	
3/23/94	25	7	5	2	
4/14/94	10	5	4	1	
5/11/94	13	3	10		
6/2/94	28	14	13	1	
7/1/94	10	4	6		
7/13/94	26	9	17		
8/9/94	34	13	21		
8/24/94	16	8	17	1	mechanical problems
9/94	33	9	24		substitute boat
10/20/94	6	3	3		mechanical problems
11/8/94	27	11	16		
11/29/94	26	17	9		
12/27/94	35	16	19		

Biologist Melvin was photographed by a Washington Times photographer on May 3 for a cover story on bald eagles and their recovery which will be displayed in the Metro Section of the Sunday Washington Times newspaper.

A volunteer, Paul VanRijn, met with Biologist Melvin on December 6, 1994 to learn about the refuge bald eagle fixed point survey. Paul will become the volunteer coordinator for the Refuge, State Park and Pohick Bay Park and will schedule volunteers and coordinate the survey program. This will be a tremendous asset to the program and minimize the administrative workload of scheduling 20-30 volunteers each quarter.

3. Waterfowl

ROS Schaff and volunteer David Mitchell installed four wood duck nest boxes on January 27.

On February 16, 1994 Biologist Melvin, Intern Collin Smith and the Virginia Department of Game and Inland Fisheries rocket-netted and neck collared and banded 25 Canada geese on the Woodbridge Research Facility. Volunteers from the National Wildlife Federation, FWS Central Office, Prince William Natural Resource Council, and Refuge Volunteers all assisted in the banding operation.

Intern Collin Smith continued his work with the wood duck nest box program. Thirteen new boxes were placed and a number were relocated. Preliminary results from 1994's wood duck nesting boxes suggests that 20 out of the 33 (67%) recently relocated nest boxes were used. Four boxes were used by Hooded Mergansers. Dump nesting decreased from 12 dump nest last year to 4 this year (a 67% decrease). Preliminary results suggest that 103 wood ducklings left the boxes along with 15 hooded mergansers. Data will be entered into a newer wood duck nest box R:Base program developed by ZB-S which will allow for multiple box check entries. Four additional wood duck hens were banded during the month bringing the total to 11 wood ducks and 4 hooded merganser hens banded out of the nest boxes this year. During his box check on March 21, 1994 intern Smith collected one horned grebe and one immature herring gull along the shoreline. Both carcasses were sent to the Center for Wildlife Diseases in Madison, WI. Both had negative results for avian cholera.

In 1994, Refuge staff cooperated in the wood duck monitoring initiative being conducted by Jim Kelly, Migratory Bird Management at the Patuxent Wildlife Research Facility. Wood duck hen call counts continued with two surveys conducted on June 1 and 2 which yielded counts of 11 and 4 respectively. Data from all four surveys conducted during May and June were forwarded to Jim Kelly at Patuxent for inclusion into the Wood Duck Monitoring Initiative. Last year's counts were conducted earlier in March and April where totals were slightly lower than this years. The objective was to survey during the peak of the breeding season which varies slightly from one year to the next.

In June 1994, waterfowl were counted at the Woodbridge Research Facility during the regularly scheduled bird counts. A total of 95 ducks and geese were counted, down from a total of 522 last month and down from the 151 counted last year during May.

In July 1994, peak waterfowl counts at the Woodbridge Research Facility yielded only 39 (21 Canada geese, 5 black ducks and 13 wood ducks) , down from a peak count of 71 in July 1993. Due to the low number of waterfowl on the refuge no surveys were conducted at Mason Neck or Featherstone.

Biologist Melvin and volunteers completed the construction of a set of Montezuma walk-in traps in July 1994. Several sites were baited in preparation of pre-season waterfowl banding. These were set in August with the first ducks captured and banded on August 19 using the newly constructed Montezuma traps. A total of 38 ducks (25 MALL, 5 ABDU, 5 AGWT, and 3 WODU) were captured using walk-in traps at the Great Marsh . No ducks were captured at the High Point Creek site.

Waterfowl surveys for 1994 at Great Marsh resumed during the month with a total count of 104 ducks and geese, (up from 12 in August 1993). No surveys were completed at High Point Creek due to the continued low numbers. Surveys at the Woodbridge Research Facility/Marumsco counted 147 (75 geese, 35 mallards, 35 wood ducks and 32 black ducks) which represents a decrease from last years August count of 276 (primarily attributed to the high count of Canada geese-230).

Biologist Melvin assisted by waterfowl biologist Gary Constanza and Donald Hayes from the Virginia Department of Game and Inland Fisheries used an air boat in the Great Marsh on the night of September 7, 1994 to net and band waterfowl. A total of 33 ducks were captured and banded (18 WODU, 8 MALL, 4 BWTE, 2 AGWT, and 1 ABDU). A second air boating trip was scheduled and canceled due to an extremely low tide which restricted access into most of the vegetated marsh areas.

September 1994 waterfowl surveys in Great Marsh counted 356 birds (a decrease from last years count of 356). High Point Creek surveys resumed during the month with a total of 99 birds (a decrease from 187 last year). Standardized surveys at Marumsco/Woodbridge Research Facility observed 131 ducks and geese, down from 220 last September. These decreases may be attributed to a later migration.

The 1994 survey at the Refuge wetlands revealed the following counts; Great Marsh-795 birds versus 850 in 1993; Marumsco/Woodbridge Unit-133 birds versus 666 in 1993 and at High Point- 217 birds versus 175 in October 1993.

November 1994 waterfowl surveys were conducted at the Refuges during the month with the following peak counts; Great Marsh- 2, 756 versus 2, 007 in 1993; High Point Creek- 130 versus 141 in 1993; and 379 birds at Marumsco/WRF versus 141 in 1993. Fall migration has arrived, however the large numbers of river ducks particularly scaup have not yet been observed in any great numbers (typically rafts of 3,000- 5, 000 ducks are common).

December 1994 waterfowl surveys of the refuge wetland areas were conducted by refuge volunteers during the month with the following peak counts: Great Marsh- 921 birds versus 1,880 in 1993; High Point Creek - 56 birds (no survey in 1993 due to ice cover); and 285 birds at Marumsco/Woodbridge Unit versus 1,414 in 1993.

4. Marsh and Water Birds

On February 19, 1994 Biologist Melvin accompanied by 11 refuge volunteers conducted the annual winter nest count in the great blue heron rookery. Over 1,580 nests were counted, up from 1,230 recorded last year. In June, a random sample great blue heron production survey yielded the following results; June 3: 48 out of the 59 nests surveyed were active (81%) with 91 young counted in 48 nests (average 1.89 young/nest) and on June 10: 49 out of 58 nests active (84%) with 65 young in 49 nests (average 1.32

young/nest). Average of both surveys suggests that 83% of the nests are active with an average clutch production of 1.59 young/ nest. Using the winter pre-nest count information, this years production would be estimated at 1,313 active nests producing an average of 1.59 young which equates to a production value of 2,087 young herons leaving the nests. Actual nesting results will not be final until a post-season nest count is completed to identify the actual number of available nests. The traditional great blue nest count was conducted by Biologist Melvin and volunteers on July 9. A total of 415 trees housing 1,174 nests were counted. Approximately 12 great egret nests were identified in the rookery. This is the second year that egrets have been positively identified as nesting within the heron rookery. A total of 63 dead young great blue herons and two great egret fledglings were also recorded. Last year during the July count a total of 467 trees with 1,214 nests were recorded. The July nest count is conducted primarily to record the number of dead young and to document use by species other than great blue herons. A random sample survey and winter nest counts are conducted to calculate production and breeding population estimates.

Biologist Melvin met with Daniel Day and Nelson Byer, Patuxent WRC researchers on November 16, 1994 to look at the great blue heron nesting colony and discuss the feasibility of conducting a research project to identify if local contamination is or has been effecting the great blue herons. Several studies have identified contamination of 1 PCB, heavy metal and PAH's in the freshwater marshes around the Mason Neck NWR.

Two white pelicans were observed off the WRF on several occasions during the month. Volunteer Jim Waggener first reported the sightings on April 6.

5. Shorebirds, gulls, Terns, and Allied Species - Nothing to Report

6. Raptors - Nothing to Report

7. Other Migratory Birds

In April 1994, Biologist Melvin compiled a list of neotropical bird species which have been identified during regularly scheduled censuses at the Woodbridge Research Facility (WRF). The list identified certain species of birds that are found in grassland and early successional habitats and identified those species which are declining throughout their ranges. Of the 22 birds listed as declining neotropical birds in the Northeast, 17 (77%) have been identified at the WRF. This information along with additional statistics on declining neotropical birds species associated with early successional habitats was presented in a fact sheet and presented to the Woodbridge Reuse Committee to illustrate the importance of protecting the unique habitats found on the WRF.

The second breeding bird point count was conducted in June of 1994 at all refuges with a total of 47 species counted at Mason Neck, 47 at Featherstone and 58 at the Marumsco/Woodbridge Research Facility.

From June 1994 data, preliminary results of the bluebird nesting boxes suggest that 34 bluebirds and 5 Carolina chickadees fledged from the Mason Neck nesting boxes. Volunteer Larry Brindza continued to monitor the blue bird boxes for the Refuge this year. Larry has done an outstanding job in maintaining and monitoring the blue bird boxes on Mason Neck since the late 1980's.

8. Game Mammals

On February 15, 1994 Zone Biologist Laskowski assisted Biologist Melvin and Intern Smith in analyzing reproductive tracts collected from the 1993 deer hunt.

Two deer pellet plot surveys were conducted March 1994.. The average population index was 132 deer.

In May of 1994 Biologist Melvin finished the annual deer hunt report and request for additional hunt program in 1995.

White-tailed deer spotlight counts were conducted on September 13, 20 and 27, 1994 with total counts of 17, 6, and 11 respectively. The counts equate to approximately 9.3, 26.2 and 14.3 acres per deer respectively. Weekly white-tailed deer spotlight counts were conducted on October 4, 11, 18 and 25 with the following results respectively; 10 deer (1 deer/15.7 acres), 17 deer (1 deer/9.3 acres), 13 deer (1 deer/12.1 acres) and 14 deer (1 deer/11.2 acres). Spotlight counts were completed during the month with three additional counts conducted on November 1, 8, and 15. Deer sighted during these surveys totaled 24 (1deer/12.1 acres), 13 (1deer/8.3 acres) and 19 (1deer/10.9 acres) respectively. The average from the 10 surveys conducted from September through November revealed an average deer population density of 1 deer per 10.9 acres which equates to 176 deer for the refuge area. These figures are used to document trends in deer density, not to estimate total deer population.

Biologist Melvin attended a DMAP (Deer Management Assistance Program) Cooperator meeting hosted by the VDGIF on September 10 in Warrenton, VA. DMAP permits and other check station materials were distributed during the meeting. Regulations and other restrictions/requirements for participating in the Virginia DMAP program were discussed.

White-tailed deer pellet plots were initially cleared on October 6 and the first survey was conducted by refuge volunteers on October 28 which revealed 3 pellet groups within the 40 plots (0.0222 deer/acre - total deer population of 40). Indices such as the pellet plot data support evidence of the effectiveness of the management deer hunt to decrease the deer population on the peninsula. Deer pellet plots were surveyed twice during the month on November 14 and 30 with only one pellet grouping identified during the first survey. The deer have obviously moved out of this area and the refuge is apparently reducing the deer population as planned.

Biologist Melvin and Refuge Operations Specialist Sanderson attended a Deer Management Symposium at Front Royal VA in November 1994.

The first three days of the 1994 refuge deer hunt took place on November 21, 22 and 25. Deer harvest est during the hunt days totaled 31, 20 and 1 respectively for a total of 52 deer. The third hunt day was the first "generation hunt" where youths were allowed to hunt if accompanied by an adult. However heavy rains prevailed during most of the day which reduced hunter participation and deer harvest.

Two additional hunt days were scheduled for mid December. The last two days of the five day deer hunt took place on December 12 and 13 in which an additional 20 and 2 deer were harvested respectively. The total deer harvest for 1994 was 74 deer (32 females and 42 males). Average weights for 1.5 year old males increased from 66 pounds in 1993 to 82 pounds this year. The average antler beam diameters also increased from 14.7mm in 1993 to 15.5 in 1994.. The percent of 1.5 males with spikes also showed improvements in herd health from 100% in 1993 to 68% in 1994. Although yearling buck parameters are starting to improve, overall the refuge deer herd is still categorized in the poor to fair ranges for Virginia deer in the Tidewater and Piedmont zones.

Biologist Melvin and ROS Sanderson attended a Deer Symposium sponsored by the Conservation and Research Center of the National Zoological Park-Smithsonian Institution and the National Park Service in Front Royal, Virginia on November 10 and 11. The topic for the symposium was "The Science of Overabundance: The ecology of unmanaged deer population". The symposium was well received and had excellent presentations from a wide variety of biologists and land managers.

9. Marine Mammals - Nothing to Report
10. Other Resident Wildlife - Nothing to Report
11. Fisheries Resources - Nothing to Report
12. Wildlife Propagation and Stocking - Nothing to Report
13. Surplus Animal Disposal - Nothing to Report
14. Scientific Collections - Nothing to Report
15. Animal Control - Nothing to Report
16. Marking and Banding

Biologist Melvin arranged with nearby Ft Belvoir to piggyback on a military program "Monitoring Avian Productivity and Survivorship (MAPS) Program on Military

Installations and other Federal Lands in the Midwest and East: ...” Operated by the Institute for Bird Populations from Port Reyes Station, California, two stations were established at Mason Neck NWR. Birds are mist-netted, identified, measured, and banded. Volunteers, trained by IBP, operate the stations and conduct an average of 8 banding sessions from May until August each summer. The refuge’s stations are Mason Neck 1 located on Sycamore Road near Old Barn Road and Mason Neck 2 on Little Marsh Road northwest of the High Point eagle nest.

1997 Capture Results (Unbanded - caught but not banded for some reason)

	Mason Neck 1			Mason Neck 2		
Primary Species Captured	Red-eyed Vireo Northern Cardinal Acadian Flycatcher Northern Parula			Red-eyed Vireo Acadian Flycatcher Northern Cardinal Prothonotary Warbler Common Grackle		
	Newly Banded	Unbanded	Recapture	Newly Banded	Unbanded	Recapture
Total # Captures	70	7	30	86	10	19
# Species Captured	19	4	10	19	7	8
Total # Species	20			22		

17. Disease Prevention and Control - Nothing to Report

H. PUBLIC USE

1. General

Occoquan previously listed as Mason Neck NWR -Woodbridge Unit

Mason Neck NWR - Woodbridge Unit 51610a	FY97	FY96	FY95
I. Total number of visitors	176	454	317
II Interpretation & Nature Observation (on-site)	109	64	17
A. Staff/Volunteer Conducted Activities	109	64	17
1. Talks	0	0	0
2. Tours	69	64	17
3. Demonstrations	40	0	0
B. Visitor Centers	0	0	0
C. Administrative Office	0	0	0
D. Kiosks	0	0	0
E. Nature Trails	0	0	0
1. Foot	0	0	0
2. Boat	0	0	0
3. Auto	0	0	0
F. Observation Towers/Platforms/Photo Blinds	0	0	0
G Other Wildlife	0	0	0
III. Environmental Education	67	390	300
A. Staff/Volunteer Conducted	67	0	300
1. Teachers participating in workshops	43	0	0
2. Students taught on-site	24	0	300
3.Students taught off-site	0	0	0
B. Non-staff Conducted	0	390	0
IV. Recreation	0	0	0
A. Hunting	0	0	0
3. Big Game	0	0	0
B. Fishing	0	0	0
E. Other recreation	0	0	0
V. Education Outreach (off-site)	0	64	51
A. Group presentations	0	64	50
B. Exhibits	0	0	1
C. Other education outreach	0	0	0
VI. Special Events	1	2	1
A. Number of news releases	0	0	0
B. Number of radio/TV spots	0	0	0
C. Number of other special events	1	2	1

During transition as property was gradually shifting over to Service hand and staff conducted outreach or permittees were referred by Army to Service.

ORP Schultz spent most of August 1993 trying to draft brochures using Aldus PageMaker and Windows. When she becomes familiar with these programs, they should be useful but meanwhile, their complexity and requirements for upgraded hardware have frustrated production.

2. Outdoor Classrooms - Students

Biologist Melvin was interviewed by a first grader (Mary Hill) from the local elementary school. Mary Hill's mother video taped the interview which focused on bald eagles and the endangered species act. The video tape program was later presented to the entire first grade class as part of a show and tell assignment.

Thomas Jefferson High School's use of the area is paying off. A senior who went through their refuge study program as a freshman has asked if she can try developing an identification guide for the refuge study pond as part of a Girl Scout gold award. However, the lead teacher for the school's use has informed us that, due to budget cuts, they will need assistance from the refuge with funding if they are to continue in 1993. On February 24, refuge manager Milton, ORP Schultz, and biologist Melvin met with Dennis McFaden, Barbara Nelson, and Jeff Leaf from Thomas Jefferson High School for Science and Technology. They discussed the school's upcoming field trips to the refuge including which areas should be covered for their GIS program, modifications to the draft teacher's guide, and design of a traffic counter for vehicles using Woodmarsh Trail parking lot. This has been an ongoing program for several years where the school has been using the refuge as a field station and generating habitat reference data and environmental education material for refuge staff. On March 25, Thomas Jefferson High School conducted the first of four planned field trips to the refuge. Since the weather had made Sycamore Road impassable, Jefferson used Woodmarsh Trail parking lot and vicinity to practice survey techniques. Thomas Jefferson High School conducted their second field trip to the refuge on April 15, bringing 50 of the 75 students engaged in the refuge study program. While Refuge Manager Milton and ROS Schaff worked with transect survey teams, ORP Schultz worked with the team drafting the teacher's guide. The remaining 25 students stayed at school to work on traffic counter technology. Thomas Jefferson High School visited twice to work on their transects and curriculum package. On May 6, Northern Virginia Community College botany professor Marian Lobstein, two volunteers from the school, Biologist Melvin, and ORP Schultz assisted the teachers with supervising 75 students. Regional office staff Sarah Bavilaqua and Ward Feurt also joined the group to observe the cooperative program. On May 20, two school volunteers, ROS Schaff, biologist Melvin, and ORP Schultz assisted with 50 students. The visits were for 2 hours each for a total of 250 activity hours. On June 1, ORP Schultz joined the Thomas Jefferson High School students for one last field trip and data collection session. The 75 students involved in the school's adoption program made their last surveys and then were given some free time to explore each other's projects. An additional 75 came from a similar but not as well organized program from the same school to try transect sampling. They spent their two hour field trip on theoretical exercises and several,

including one teacher had to be retrieved by Schultz before the buses could leave.

Green Hedges School made their monthly visits in 1993 to Great Marsh Trail on February 16 despite poor weather, on April 20, and on May 18. They maintained a poster in the trail head kiosk with points of interest they wanted to share with the public. On June 7, ORP Schultz met with Green Hedges School for their final visit to the refuge for the year. They started last September and visited the refuge monthly, collecting baseline observations that they listed in the trail kiosk for visitor information and will be submitting summaries for refuge reference. The 15 sixth and seventh grade students discussed the value of their data collection with Schultz, both for general reference to other visitors and for potential management planning. The school has expressed possible repetition of the project during the 1993-94 school year.

As part of their visit February 20 to plant trees on the refuge (see volunteer section), 13 students and 5 adults from Parkside Middle School conducted 3.5 hours of aquatic studies along the river and in the study pond.

Ashlawn Elementary had to cancel their March 1993 trip and two teachers cancelled their pre-trip visit due to poor road conditions.

Susan Basile from National Cathedral School brought her class out on April 23, 1993. They are continuing their studies of the sand bar and marsh vegetation in Great Marsh as an ongoing data collection program to be entered when the refuge gets a GIS program. ORP Schultz met with 2 teachers and about 12 students from National Cathedral School on April 29 for a discussion of their long term studies at the refuge and to study wildlife activity in their study sites at night. National Cathedral School conducted a field trip to the refuge on October 12 and 13, completing a beach clean up as part of their ongoing studies of the refuge beach.

Kerrydale Elementary brought about 100 second grade students out to Mason Neck for a field trip on April 28, 1993.

The Chesapeake Bay Foundation conducted a 7 hour canoe tour of the Great Marsh for 19 students and 4 adults on May 22, 1993 for 168 activity hours. They returned on June 30, July 8, and 28. Chesapeake Bay Foundation conducted another 7 hour canoe tour and environmental program for 27 students and their 2 teachers on September 23.

Connie Turner from Milburn School, the adult alternative learning facility located down the hall from refuge headquarters expressed interest in using the refuge for field trips. After touring the facilities on June 29, she signed up for a field trip on June 30 for her environmental studies class.

Fairfax County School Age Child Care (SACC) contacted the refuge to request a letter of support for a grant they were requesting. The grant would help them set up outdoor study

sites at each of their thirty centers. On October 14, 1993 ORP Schultz supplied a letter saying staff of Mason Neck NWR could assist with planning the sites and would help with teacher training and materials. The refuge has had a close relationship with SACC for the last three years, usually presenting one or two workshops annually and contributing posters and miscellaneous materials.

Refuge Manager Milton and ORP Schultz met with teachers at Thomas Jefferson High School for Science and Technology (TJSST) on February 1, 1994 to discuss the upcoming season on the refuge. TJSST then visited their sites to set up for data collection on February 6. In July staff met with TJSST teachers to discuss the 1994 product. They also worked some on the next years program and the possibility of the cooperative going into DC to work with schools there to extend the outdoor research type of process to them using other open spaces in the city.

3. Outdoor Classrooms - Teachers

ORP Schultz gave a Project WILD workshop for 19 students at Mary Washington College on January 13, 1993. The workshop has become a standard part of their student teacher program and Schultz visits once a semester to conduct the workshop.

George Washington University professor Mark Simpson received a pre-trip orientation tour on January 23, 1993. He is considering bringing his ornithology class to Mason Neck. This would be George Washington University's first use of the area.

On February 6, 1993 ORP Schultz conducted a 6 hour Aquatic Project WILD workshop for 11 teachers at Antietam Elementary in Woodbridge, Virginia.

On March 18, 1993 ORP Schultz met with teachers from Garfield High School in Woodbridge, Virginia. They discussed a cooperative program, similar to Thomas Jefferson High School, where Garfield would adopt Marumsco or Featherstone refuge as their research station, producing data for use by refuge staff in return for logistical and staff support. They would start at Marumsco and then upon acquisition of Harry Diamond Lab or improved access to Featherstone, would expand their program to cross-curricular studies. ORP Schultz met with 4 teachers from Gar-Field High School at Veteran's Memorial Park to discuss their adopting Marumsco NWR for field studies. Studying the marsh initially would serve as training and let the teachers test out feasibility of intracurricular studies. This program would expand to more comprehensive studies and student internships if the Service acquires the Woodbridge Army Research Facility.

On April 14, ORP Schultz conducted a 4 hour Aquatic Project WILD workshop for 36 teachers at Antietam Elementary in Woodbridge, Virginia. This had previously been scheduled for March 13 but was canceled due to predictions of a blizzard.

On April 21, ORP Schultz attended the Fairfax County Public School Interagency

meeting at Thomas Jefferson High School. This meeting brought together teachers at elementary and secondary levels with government agencies based in Fairfax County to discuss scientific data being collected in the county and making it accessible for real life studies in the classroom. The group will hold a second meeting after evaluating several questionnaires distributed during the meeting. This grew out of Schultz's discussions with a Fairfax Audubon Society volunteer who has been trying to promote dissemination of regional local natural history information in a format accessible to local teachers.

Four second grade teachers from Kerrydale Elementary in Woodbridge attended a pre-trip tour on April 22, 1993.

Dr. Ernst of George Mason University brought two classes from his herpetology program to the refuge on April 28, 1993. He then brought classes out on May 3 with each class of about 15 students spending 3 hours on the refuge for 90 activity hours.

At the request of Claire Cassel in the Washington Office of Training and Education, on June 2, 1993 Refuge manager Milton, ORP Schultz, and Thomas Jefferson High School teachers McFadden, Nelson, and Leaf gave a presentation in the Washington office during a brown bag seminar. They spoke about the school's relationship to the refuge as a data source for the refuge and a practical studies project for the students. The program went over well to Washington office staff and to representatives of Eastern High School, the Washington office's adopted school. The only event marring the experience was the building security guard's refusal to let one of the teachers take a display out of the building without a property pass, even though it belonged to the teacher and had been observed by the guards when the teacher brought it in. With the assistance of Inez Conners and the migratory bird stamp office, Schultz was able to get a permit and return the teacher's display.

ORP Schultz and Parkside Middle School teacher Ed Henthorne put on a Project WILD workshop at Prince William Forest National Park for 10 seasonals and teachers on June 5.

On June 16, Schultz presented a workshop about the Chesapeake Bay to 20 teachers from Fairfax County's School Age Child Care (SACC) program. Featured were the "Bay Book" and "An Introduction to the Bay" with suggested activities. Mason Neck NWR presents some sort of a workshop to this group on an annual basis and will soon restart the cycle to cover Project WILD, Aquatic WILD, and Chesapeake Bay B, C's on a 3-4 year revolving cycle to keep their teachers updated on these materials.

While waiting to meet with a volunteer, Schultz observed a vehicle convoy enter Woodmarsh Trail and a teacher start working with a group of about 15 young adults. She contacted the leader who turned out to be a professor at George Mason University who teaches environmental economics. The group was welcomed and Schultz invited the professor to contact the office to see how the refuge might be of greater assistance and value during future visits.

Outdoor Recreation Planner Schultz conducted a six hour Project WILD workshop for 25 teachers at Mantua Elementary School on July 6, 1993 in preparation for summer school.

On July 13, 1993 Outdoor Recreation Planner Schultz met with Carol Couse, principal at Fort Hunt Elementary in Fairfax County to discuss possible environmental education projects. The Office of Training and Education had requested Mason Neck meet with them to set up some kind of program similar to the refuge's association with Thomas Jefferson High School. Unfortunately, the refuge can't establish the same relationship due to the elementary school's inability to collect data of a quality useful in management and planning as with the high school. Instead, Schultz discussed a more local program for the school, developing a teacher guide to their own grounds that teachers at that school as well as visiting classes could use. Efforts will be made to also tie in the middle school and high school with mentor and peer programs. This would improve communications between schools by taking field trips to each other's facilities, reduce travel costs by in some cases having schools close enough to walk, and possibly build community support by family involvement in programs on site.

On July 29, Outdoor Recreation Planner Schultz attended a planning session sponsored by Dr. Don Kelso of George Mason University to consolidate and promote environmental education associated with the Potomac River. Over thirty agency and civic representatives met and agreed that an umbrella organization would be useful. At the heart of the meeting was a proposal by the university to coordinate an environmental education program that would supply student teachers as field trip leaders to local schools and cover topics ranging from farming in the upper reaches of the watershed area to the river's connection via the Chesapeake Bay to the ocean. Dr. Kelso's plans hinge on the Service's acquisition of Harry Diamond Lab where he would like to base their program as a permittee or cooperative program.

ORP Schultz presented a Project WILD workshop to 21 student teachers at Mary Washington College on August 25, 1993. Two more are scheduled in September with multiple communications in August with the state Project WILD coordinator to arrange for materials and convert over to the new books.

In August, copies of the video, Truth About Teachers, were loaned to Fort Hunt Elementary and Mary Washington College.

On September 11, 1993 Outdoor Recreation Planner Schultz conducted a Project WILD workshop on the refuge for 24 girl scout leaders from the National Capital Council. The program was coordinated by Jan Carroll from Public Affairs in the Washington Office.

George Mason University professor Dr. Ted Bradley brought 22 students from his botany class for his annual 2 hour trek through the mud in the Great Marsh on September 19.

Assistant Professor Marion Lobstein conducted a class field trip for her 20 aquatic plants

students on October 30, 1993 after a pre-trip visit on October 28. These are all adult students taking continuing courses through Northern Virginia Community College.

4. Interpretive Foot Trails

In 1993, due to the third highest precipitation ever recorded for March (6.5+ inches versus 3.5 inches), trails were in poor condition both for footing and downed trees. However, the poor weather also discouraged visitation so volunteers and staff had a chance to clean up the worst areas.

Maintenance Worker Boska, assisted by volunteers Frank Holloway and Becky Perkins, cleared and lined portions of the Woodmarsh Trail in December 1994. Hazards, i.e., snags and widow makers in close proximity to the trail, were removed.

5. Interpretive Tour Routes - Nothing to Report

6. Interpretative Exhibits and Demonstrations

On April 1, 1993 Craig Koppie from the Chesapeake Bay Estuary Program delivered a display panel entitled "Our Abundant Chesapeake". It will be used in the Woodmarsh Trail kiosk until a determination is made whether the refuge can put up a display at the Rippon Rail Station.

Mason Neck NWR was again invited to participate in Gunston Elementary School's annual fun fair and community spirit day. After attending the planning meeting on May 11, 1993 and promising the refuge would supply Take Pride coloring books as favors for the duck pond game, ORP Schultz staffed an exhibit at the fair on May 22. Over 400 children and parents visited the exhibit, drawn by the display of taxidermy mounts. Many parents took the time to ask questions and seemed receptive regarding current refuge operations. Even several of the other exhibitors and fair staff were straightened out on the differences between Mason Neck Refuge and Mason Neck State Park.

ORP Schultz staffed a refuge display at George Mason University's second annual Kid's Day in June 1993. The university gathered about 20 community and governmental organizations to demonstrate their functions and career opportunities to several hundred students. One of the highlights for children at the Mason Neck display was getting to try on Service garb including waders, fire and ATV helmets, radios, overalls, traffic vests, and other paraphernalia that a refuge employee may wear in the line of duty.

7. Other Interpretive Programs

In February, 1993 ORP Schultz received a call from Glasgow Middle School teacher Harazin for whom she taught an Aquatic WILD workshop in 1992. His and another teacher's students had been discussing hunting following the incident of a county game

warden being shot. He was concerned about their one-sided view point against any form of hunting. Schultz spoke with 60 students including their 7th grade gifted program on February 18, using Mason Neck as a case study to present the concept of hunting as a management tool and ethical behavior in outdoor recreation. Most of the students were very receptive with several of the strongest opponents seeming to change their opinions and accept the concepts.

On February 10, 1993 ORP Schultz was a judge at the Robert E. Lee High School Science Fair. This is an annual event and provides contact with Fairfax County teachers.

On March 20, 1993 ORP Schultz served as a judge in the senior zoology category for the Prince William County Regional Science Fair. The winner had an innovative project to demonstrate increasing food and space to match an increase in a species' population would not result in equivalent survival of the individuals.

ORP Schultz was invited to give a program about wildlife management on Mason Neck NWR to members of The Nature Conservancy on May 1. The Virginia chapter held it's 1993 annual meeting at the neighboring Mason Neck State Park with three post meeting activities being conducted on the refuge: Schultz's talk about wildlife management, a botanical exploration of Great Marsh Trail, and a general interest hike on Woodmarsh Trail. An estimated 50 participants spent about 2 hours involved in these programs for a total of 100 activity hours. Refuge Manager Milton also participated through assistance to the state park with crowd management.

Fourteen members of Fairfax Audubon Society participated in a tour of the refuge on January 23, 1993. ORP Schultz oriented them, then gave them a tour of the environmental study area as part of the station's community outreach.

On May 3, 1993 as part of the station inspection, ORP Schultz gave regional office personnel Dawn Comish, Sarah Bevilacqua, and Ward Feurt a tour of Mason Neck NWR. Schultz and Bevilacqua then spent most of May 5 touring the area by foot.

Biologist Melvin gave a presentation about bald eagles and management programs at Mason Neck to the July 26, 1993 meeting of The Raptor Society. The audience was appreciative and interested but expressed reservations about the hunt program and hopes for the Service to get Woodbridge Research Facility.

On September 18, 1993 Outdoor Recreation Planner Schultz and Volunteer Jim Waggener conducted a tour of Harry Diamond Laboratory for members of the Virginia Native Plants Society as part of their annual meeting being held in Manassas, Virginia. Unfortunately, due to poor weather and scheduling conflicts, there were only two participants for the tour but one is involved in the GarField High School "Project Refuge" and the other person is active in numerous conservation and political organizations so they were both very interested in disposition of the property.

On June 28, Biologist Melvin gave a slide presentation on bald eagle management at Mason Neck to the Friends of Dyke Marsh at the Huntley Meadows Visitor Center. The presentation was well received from an audience of approximately 50 interested naturalists.

8. Hunting

Staff held a hunt planning meeting on June 21 to pass ROS Schaff's duties on to other staff and to discuss plans for the 1993 hunt. Many of the plans could not be finalized until the state park commits to participating in the hunt. Staff then drafted a draft joint agency hunt news release and submitted it to the state park for review. They suggested minor changes twice and then asked for it to be held until they could have their Richmond office review it, delaying the planned August 1 release. The refuge prepared and distributed joint agency news releases about the refuge and state park hunt on August 3 and 24. The initial news release was later than anticipated due to additional levels of review by state park personnel. A third news release, under the Service logo, was issued regarding the refuge's mobility impaired hunt. Though press coverage has been poor, response is moderate with just under 500 applications received by the end of August.

The 1993 hunt permit and brochure were prepared on the computer using PageMaker and WordPerfect graphics and sent to the regional office mail room for reproduction. Turnaround was very fast with the materials returned the same week as submission. Preparation of these materials benefitted from recent struggles to learn PageMaker while drafting several general brochures for the refuge.

On September 7, Refuge Manager Milton and Outdoor Recreation Planner Schultz met with Park Manager Shrader and Assistant Manager Stapleton at Mason Neck State Park to discuss coordination for the 1993 deer hunt since the park will be joining in for the first time. They reviewed plans for the lottery, orientation sessions, and logistics and staffing for hunt days. So far, the refuge has handled publicity, administration of the lottery, and preparation for the orientation and range sessions, and set up of the check station. As a newcomer, the park's role will be to assist with the orientations and administering their hunt areas. On September 14, in preparation for the orientations, Maintenance Worker Boska repaired and replaced target frames needed for hunter certification. Refuge Manager Milton, assisted by Outdoor Recreation Planner Schultz and Maintenance Worker Boska, conducted the lottery on September 18 at the Lorton Library to select hunters for this year's management hunt. Park Manager Shrader and two hunters witnessed the lottery. Of 752 applicants, 408 hunters and 100 standbys were selected by a combination Rbase and Lotus program. Their names were put on the refuge answering machine that evening and selection letters mailed September 20. Since only 4 mobility impaired hunters applied, all were selected and notified. Orientation and range sessions for the upcoming hunt were conducted on October 9, 10, and 30 at Fairfax Rod and Gun Club. Two refuge staff handled orientation, assisted by a park staff and a volunteer while two refuge staff handled the range and permit sales, assisted by a volunteer and club

range officers. During 9 sessions (3 per day), 318 selectees and 37 standbys were processed with a resulting sale of 355 permits out of a possible 408. Only 3 of 4 applying mobility impaired hunters completed the orientations and picked up their permits.

On October 7, 1993 Refuge Manager Milton met with reporter Dora Hassen of Channel 8 News television to discuss the deer hunt and wildlife management.

When the state park announced their participation in the hunt, the local elementary school's PTA again brought up their concerns regarding safety for the school bus and neighboring children. They contacted their school board supervisor who referred the matter to risk management in the school system's safety office. Sven Thulin from that office contacted the refuge to ask questions and was offered a meeting and tour. ORP Schultz met with him at Gunston Elementary, reviewed an aerial photo, supplied him with maps, samples of boundary flagging, and copies of hunter orientation handouts, and took him on a tour. He left with posters and souvenir buckshot, fully satisfied with refuge precautions, and said he would do his best to intercept any further safety complaints.

Maintenance Worker Boska, assisted by Refuge Manager Milton and ORP Schultz spent most of the last two weeks of October reposting boundaries and working on the road to parking lot I in preparation for the hunt.

Staff met with the state park folks about the 1993 hunt and started planning the upcoming 1994 hunt on February 7, 1994. Various aspects of the upcoming season were discussed including the potential of a generation hunt and additional zones for the state park to allow hunters to roam within larger blocks rather than stay confined to their smaller areas. A second meeting was held on the 8th with the state park on the changes in the hunt for this year and to discuss what went well and what needs to be adjusted. It was a very positive meeting, and identified a need to define what makes up a generation hunt that must be politically correct. The need for all hunters to have passed the state hunter safety course might cause a problem with sharing hunters.

The 1994 lottery was held on September 10 at the State Park Visitor Center to select the hunters for the White-tailed Deer hunt and its companion Generation hunt. Only one hunter showed up but the draw was completed and letters of selection mailed out by COB Monday. No glitches occurred in the program this time. On October 8, 9 and 29 staff conducted the deer hunter orientation and weapon certification at the Fairfax Rod and Gun Club in Manassas, Virginia. Biologist Melvin and Maintenance Worker Boska operated the range and permit sales while RM Milton, ROS Sanderson and ORP Schultz conducted hunter safety and orientation sessions. Maintenance Worker Boska and Refuge Operations Specialist Sanderson completed repairs to the road into the treestand area. Boska and Sanderson cleared hunt boundaries. Biologist Melvin and Outdoor Recreation Planner Schultz completed hunt boundaries posting. Boska installed a two-way radio at the maintenance poll shed to be used by the deer check station.

Mason Neck Hunt Summary

<u>Year</u>	<u>Typ</u>	<u>Appli- cants</u>	<u>Orient Assign</u>	<u>Permits Stby</u>	<u>#Hunt Sold Avai</u>		<u>Act Days</u>	<u>/Day</u>	<u>Bag Visits</u>	<u>Hours Hrs</u>	<u>Hunter M F Tot</u>			<u>/Deer</u>	<u>Success</u>
1989	Arch Gun	1700 combined	-	12	107 235	120 315	6 9	20 35	134 gun portion cancelled due to law suit	1370	4 4	4 4	8	171	7%
1990	Arch Gun	440 1100+	134 -	8/30 -	139 151	180 180	6 6	30	180 209	1852 2038	3 32	6 44	9 76	206 27	5% 34%
1991	Gun	-	-	-	-	-	12	-	509	4135	-	-	137	30	-
1992	Gun MI	742 18	248/304 8	31/76 -	279 -	304 -	10 10	38 3	394 19	3457 185	- -	- -	52 8	60.7	-
1993	Gun MI	- -	- -	- -	- -	- -	6 6	78 3	578 7	4253 64	- -	- -	144 -	30 -	- -
1994	Gun MI Gen	443 2 47	304 2 27/34	- - 3/5	295 2 30	344 - 34	4 4 1	86 3 30	402 6 27	3202 66 515	41 0 1	32 0 0	73 0 1	44 0 515	29 0 2
1995	Gun MI Gen	514 4 52	126 3 37/47	30/70 - 2/5	156 3 37/2	172 - 39/47	2 2 1	86 3 39	169 5 39	1509 50 787	23 - 11	17 - 8	40 - 19	38 - 41	30 0 49
1996	Gun MI Gen	535 77	162/53 40/9	- 49/47	153 3 39	172 6 39	2 2 1	86 3 39	168 3 39	430 567	12 6	30 2	42 8	34 71	25
1997	Gun MI	473	317	-	316	344	4 4	86 3	- -	- -	51 0	62 0	113 -		

A/Arch - Archery G/Gun - Shotgun, buckshot only Generation data by permit (youth & adult) Hunter Success = #hunters who got a deer / # hunters
 MI - Mobility Impaired, run simultaneous to regular gun hunt/same rules Gen - Generation hunt pairing youth w/ adult, dropped 1997 not suitable for MSN
 1993 Day/Take: 1-54, 2-28, 3-17, 4-25, 5-10, 6-10 First year of both refuge and state park hunting 1997 Day/Take: 1-72, 2-20, 3-19, 4-2
 Hunt schedules varied (M/T Th/F, M/W/F, M/T/W, sequential weeks, alternating weeks, skip weeks, etc to try for least disturbance of herd and vicinity)

9. Fishing - Nothing to Report

10. Trapping - Nothing to Report

11. Wildlife Observation

This was limited to the two posted trails at Mason Neck. Woodmarsh Trail is a three mile trail through mature deciduous forests with opportunities to view the Great Marsh and Raccoon Creek. Its dirt surface, in some areas improved with gravel, French drains, and check boards provides a rough, still wild feeling for the visitor. Great Marsh Trail, off of Gunston Road is three quarters of a mile long and ends in a wooden platform overlooking the Great Marsh and Potomac River. It is level with compacted gravel held by edging boards and is considered marginally handicap accessible. Modification of the surface has been an ongoing project using scouts and adult volunteers. See section E. Administration, part 2 Youth Programs and part 4 Volunteer Program.

12. Other Wildlife Oriented Recreation - Nothing to Report

13. Camping - Nothing to Report

14. Picnicking - Nothing to Report

15. Off-Road Vehicling - Nothing to Report

16. Other Non-Wildlife Oriented Recreation - Nothing to Report

17. Law Enforcement

Refuge manager Milton and ORP Schultz attended 1993 law enforcement refresher at Patuxent NWR from March 30 through April 2. ORP Schultz and Maintenance worker Boska then spent 2 hours July 30 on the refuge firing range, reviewing handgun and shotgun techniques discussed during the April law enforcement refresher sessions.

Sometime the weekend of July 31, someone ignited a bonfire on Great Marsh Trail. Staff had been working on the trail July 30 and left it in good shape. When staff hiked the trail on Monday, they found the burn site and staff conducting the morning trash run, reported finding burned beer cans and bottles in the parking lot. Residents in the community also phoned to report finding remains of the fire and were concerned about due to drought conditions. ORP Schultz discussed with them about putting something in the community newsletter rather than a general news release that might prove suggestive to vandals.

Maintenance worker Boska underwent transitional training August 18 to 20 at Chincoteague NWR in preparation for switching over to the Smith and Wesson 4046 semi-automatic pistol from the Smith and Wesson 66 revolver.

Responding on a boat trespass along the Occoquan shoreline, maintenance worker Boska encountered a couple who said a seal had burst on their motor. Boska was able to assist them with starting the motor and moving away from the refuge shoreline. The couple

seemed in no hurry to leave, taking their time and playing around in the neighboring waters before finally leaving the area.

Refuge Manager Milton, ORP Schultz, and Maintenance Worker Boska attended firearms recertification and drug training at Patuxent NWR on October 21, 1993.

On January 10, 1994 Maintenance worker Boska and Outdoor Recreation Planner Schultz used an old NIK drug identification kit to drug test a "crack can" found on the Refuge.

Refuge Manager Milton traveled to Eastern Shore of Virginia NWR for a LE refresher committee meeting. Jan 19th through 20, 1994.

All four refuge officers attended the Law Enforcement Refresher training in April 1994 month at Eastern Shore of Virginia NWR. RM Milton attended both sessions as a member of the Committee.

Vandalism to the Great Marsh Trail overlook occurred around May 24, 1994. Several two by two vertical posts along the railing were kicked out.

July 18, 1994 was a busy law enforcement day for Refuge Officer Boska. In the morning, officer Boska reported a van he suspected had parked overnight at the Refuge. He requested backup and Officer Yvonne Schultz responded. The four occupants of the van stated they had slept at the Refuge during "closed" hours. The occupants said they had been traveling late the prior evening and the Woodmarsh parking lot was the only place they could pull over to rest. Also on July 18 Officer Boska stopped a vehicle driving in a closed area of the refuge. The driver stated he was collecting driftwood. Officer Boska informed the driver he had to leave.

In September 1994 the background investigation on Maintenance Worker Stephen Boska began. The necessary forms were completed and mailed to the next echelon for review and came back cleared.

On the morning of September 16, 1994 Maintenance Worker Boska noticed the gate to Mason Neck State Park was opened in an unusual manner and both locks were missing. He called the State Park headquarters to report it. After a quick check by a member of the State Park's staff, he reported a break in had occurred at their Visitor Center. Fairfax County police investigated the case.

Refuge Officers, Boska, Sanderson, and Schultz qualified on October 26 at Patuxent National Wildlife Refuge. ROS Sanderson arranged for additional law enforcement officers from Blackwater NWR and Prince William Forest and Park to help with Law enforcement activities associated with the deer hunt.

In September 1994 Maintenance Worker Boska reported seeing two dogs running on the Refuge. He also received a report from a visitor that the dogs were chasing deer. A trap was borrowed from Fairfax County Animal Control. Staff were unable to catch them after several attempts. The two dogs running throughout the Refuge continue to elude capture by Refuge staff.

18. Cooperating Associations - Nothing to Report

I. EQUIPMENT AND FACILITIES

1. New Construction - Nothing to Report

2. Rehabilitation

On June 1, 1993 ROS Schaff and Maintenance worker Boska repaired the shop boat ramp using an 8 inch by 8 foot by 20 foot section of geoweb. The honeycomb plastic was stretched over a leveled area of sand at the end of the old boat ramp, then filled with cobble stone size rock, and topped with 1 inch stone. The sides were protected with number 2 rip rap. The extension has improved boat launching at both high and low tide.

Maintenance worker Boska spent much of July 1993 the month upgrading Great Marsh Trail for handicap accessibility but work went slowly due to oppressive heat and humidity taking its toll on workers and baking the clay subsoil into an rock-hard barrier. Prince William Forest National Park loaned the refuge a three person YCC work party on July 30 to help with the trail but they only advanced it by about 30 feet.

On August 6, 1993 maintenance worker Boska met with a representative from Springfield Crane to discuss access for a crane to lift the cookie cutter into High Point Creek. He then graded portions and added stone in preparation for delivery of the cookie cutter and a crane on August 31.

In July, 1994 Maintenance Worker Boska and intern Jason Zombron installed a sign in the Woodmarsh Trail parking lot detailing the hours. Parking areas were lined with posts and rope to define them in greater detail.

Maintenance Worker Boska, intern Jason Zombron and volunteers Frank Holloway and Vance Wiesen cleaned encroaching sweetgums from a family burial site off of Anchorage Road. They also constructed shoreline stabilization structures near the Little Marsh impoundment.

Heavy thunderstorms and high winds on September 27, 1993 damaged the shingles on the environmental education pavilion. These were repaired on September 28.

Gates to the deer exclosures were constructed and installed on the deer exclosures in March 1994 and continued into April. A fallen tree caused damage to one deer exclosure which required major repairs.

In July, 1994 Maintenance Worker Boska continued to repair the 1982 Dodge dump truck obtained as excess property from the National Park Service.

Road work became the priority task for September 1994. Repairs to Woodmarsh Road began using geogrid fabric and stone as a base. Maintenance Worker Boska and Refuge Operations Specialist Sanderson began the project in which over 250 tons of stone will be

used. Boska and Sanderson repaired road used by mobility impaired hunters. Boska and Sanderson picked up a truck load of free metal sign post (used) donated by a local sign shop. The posts will be useful in boundary posting Featherstone NWR. The majority of available time was spent on impoundment improvements and road upgrading.

Maintenance Worker Boska, Refuge Operations Specialist Sanderson and volunteers Frank Holloway and Becky Perkins upgraded Woodmarsh road and repaired damage to a section of the road that had been washed out. Geogrid was laid over the soft clay base then covered with 2 to 2-1/2 inch stone

3. Major Maintenance

On September 1, 1993 Maintenance Worker Boska completed several repairs to the cookie cutter, on loan from Prime Hook. These included a hydraulic leak, windshield wiper, and coolant recovery system. The cookie cutter was operated until the bolts holding the port (left) engine worked loose and the vibration broke a bearing. Maintenance Worker Boska was able to catch a similar condition in the starboard engine before damage occurred and brought the unit in "on a wing and a prayer". Repairs continued into February 1994.

In March, 1994, Boska worked with Regional Office staff on the archeological aspects of the new addition to the shop yard and the paving of the great marsh trail parking lot. Approval has been long delayed for this major expansion of the yard.

Two outboard motors broke down in August 1994. The Evinrude 35 Hp jet outboard sustained a cracked engine block. The failure may be a result of improper assembly by the manufacturer. The Evinrude 25 Hp outboard's recoil spring broke. Both units are awaiting replacement parts. Also in August, Maintenance worker Boska staged 140 tons of gravel to be used for the major project of repairing and extending treestand road and Boska and Sanderson began boundary posting Featherstone.

In September, 1994 plans were initiated to have the well at the maintenance shop repaired since the water is not drinkable. John Van inspected the well and submitted bid for repair/replacement but said it would be an expensive project.

4. Equipment Utilization and Replacement

Patuxent NWR returned the station's dozer, trailer, and dump truck that had been on loan to Eastern Shore NWR for training the week of June 7, 1993. Upon it's return, almost \$500.00 of repair to the truck and trailer's electrical system had to be made before it could be used for easement work. Then, on June 21, the refuge loaned their dozer, trailer, and dump truck to Blackwater NWR for rehabilitation projects. On August 19, Blackwater NWR staff returned Mason Neck's dump truck, dozer, and trailer. Blackwater had been using it for dike and wetlands rehabilitation.

In a continuing cooperative program with the state park, the refuge loaned them the refuge's Kubota garden tractor and blade for trail work in June.

Per regional guidance, all boat and utility trailers were rewired to match any refuge vehicles that might be used to haul equipment.

Problems continued with the Dodge 1988 pickup in July with it quitting on Maintenance worker Boska on one of the hottest days of the year. Office staff were able to respond and tow the truck back to the shop. A worn or defective distributor cap was the problem. It had already been replaced once in April for similar stalling problems.

On June 15, 1994 Maintenance Worker Boska and Biologist Melvin picked up a surplus dual axle mini-dump truck from the Prince William Forest Park (NPS). The truck needs some minor repairs and is in marginal condition but will serve for needed repair work on unimproved roads at Mason Neck.

Sanderson sent in a purchase order for an above ground fuel tank in August 1994.

In December 1994, the 1250 John Deere tractor was fitted for the Bradco backhoe attachment. The backhoe was put to quick use as Maintenance Worker Boska and Refuge Operations Specialist Sanderson repaired a culvert along a newly upgraded road.

5. Communications Systems - Nothing to Report

6. Computer Systems

In August, 1994 Refuge Operations Specialist Sanderson explored possibilities of obtaining a new 486 computer with Terry Wilson in the RO. A Gateway Pentium computer with 17" color monitor was received on September 21, 1994 and the HP PaintJet XL300 printer on September 22. This computer system will be used by Biologist Melvin for wildlife inventory data, gypsy moth projects and for the development of GIS. ArcView was purchased and received on September 19.

On August 18th and 19th, Refuge Operations Specialist Caroline Sanderson attended a GIS conference at Bombay NWR.

7. Energy Conservation - Nothing to Report

8. Other - Nothing to Report

J. OTHER ITEMS

1. Cooperative Programs

On September 9, 1993 Outdoor Recreation Planner Schultz attended the second organizational meeting for a coalition in support of environmental education about the Potomac River. The meeting was conducted by a George Mason University Professor who would like to use Harry Diamond Laboratory as a focal point for a program encompassing the Potomac River drainage system from its headwaters to the Chesapeake Bay.

2. Other Economic Uses - Nothing to Report

3. Items of Interest

On January 22, 1994 the Refuge office moved from the second story of a strip mall on Jefferson Davis Highway in Woodbridge, Virginia to the first floor because the previous office was not handicapped accessible (no elevator in the building). Secretary Mitchell and Biologist Melvin supervised the Saturday moving event. On January 20 and 21, Maintenance Worker Boska and Intern Smith helped pack office materials in preparation for the office move.

4. Credits

Schultz wrote the report. Weiler reviewed it. Special thanks to Carol Sanderson and Debbie Melvin for leaving good notes on their computers so that this information could be collected 6 years later.

K. FEEDBACK

Its been said.

FEATHERSTONE NATIONAL WILDLIFE REFUGE
Woodbridge, Virginia

INTRODUCTION

Featherstone National Wildlife Refuge is an unmanned station and is located 4 miles southwest of Mason Neck at the mouth of Neabsco Creek where it joins the Potomac River. The refuge is approximately 22 miles from Washington, D. C., in Prince William County, Virginia.

Acquired in 1979 from the District of Columbia, Featherstone Refuge was originally proposed to be one of a 17 unit Potomac Estuary National Wildlife Refuge Complex. No additional Federal acquisitions were made after this plan was proposed in 1970 until recently when the U.S. Army initiated discussions to transfer property on Occoquan Bay to the Service. With this addition and discussion of additional acquisitions in Stafford County, elements of this plan may come to fruition.

Featherstone NWR contains 325 acres of woodland and freshwater tidal marsh along the northern shore and mouth of Neabsco Creek and north around Featherstone Point along Occoquan Bay. Topography is almost entirely flat on the east side with patches of bottom land hardwoods and tidal marsh. A Richmond, Fredericksburg and Potomac Railroad (RF&P) right-of-way bisects the Refuge from north to south with built up elevations (up to 80 feet) separating the east from the west with its series of sharply incised peninsulas. An abandoned railroad grade also traverses the Refuge. Farm Creek passes through the northeastern portion of the Refuge before draining into Occoquan Bay and the Potomac River.

Official access is by two meandering right-of-ways, neither of which are accessible to vehicles. Staff have taken advantage of a commuter rail station built next to the refuge as a way to cross the tracks and gain quicker access to the refuge without having to cross creeks and vernal pools. The previous alternative was walking a quarter to a half mile on the railroad tracks to reach the refuge. No public use is permitted on Featherstone, although a considerable amount of unauthorized activity does occur.

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11. Fisheries Resources - Nothing to Report	4
12. Wildlife Propagation and Stocking - Nothing to Report	4
13. Surplus Animal Disposal - Nothing to Report	4
14. Scientific Collections - Nothing to Report	4
15. Animal Control - Nothing to Report	4
16. Marking and Banding - Nothing to Report	4
17. Disease Prevention and Control - Nothing to Report	4

H. PUBLIC USE

1. General	4
2. Outdoor Classrooms - Students - Nothing to Report	4
3. Outdoor Classrooms - Teachers - Nothing to Report	4
4. Interpretive Foot Trails - Nothing to Report	4
5. Interpretive Tour Routes - Nothing to Report	5
6. Interpretative Exhibits and Demonstrations - Nothing to Report	5
7. Other Interpretive Programs - Nothing to Report	5
8. Hunting - Nothing to Report	5
9. Fishing - Nothing to Report	5
10. Trapping - Nothing to Report	5
11. Wildlife Observation - Nothing to Report	5
12. Other Wildlife Oriented Recreation - Nothing to Report	5
13. Camping - Nothing to Report	5
14. Picnicking - Nothing to Report	5
15. Off-Road Vehicling - Nothing to Report	5
16. Other Non-Wildlife Oriented Recreation - Nothing to Report	5
17. Law Enforcement	5

I. EQUIPMENT AND FACILITIES

1. New Construction - Nothing to Report	5
2. Rehabilitation - Nothing to Report	5
3. Major Maintenance - Nothing to Report	5
4. Equipment Utilization and Replacement - Nothing to Report	6
5. Communications Systems - Nothing to Report	6
6. Computer Systems - Nothing to Report	6
7. Energy Conservation - Nothing to Report	6
8. Other - Nothing to Report	6

J. OTHER ITEMS

1. Cooperative Programs - Nothing to Report	6
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2. Other Economic Uses - Nothing to Report	6
3. Items of Interest - Nothing to Report	6
4. Credits	6

K. FEEDBACK

A. HIGHLIGHTS

B. CLIMATIC CONDITIONS

See Mason Neck National Wildlife Refuge section for information.

C. LAND ACQUISITION

1. Fee Title

ROS Schaff spent January 25, 1993 scouting the boundaries of the northern Featherstone addition in preparation for boundary posting. The addition was acquired in May 12, 1992 as a proffer from a developer north of the Refuge near the start of the eastern right-of-way.

2. Easements

The only existing access to Featherstone NWR is from a right-of-way (ROW) east of the railroad tracks and on the northern portion of the refuge. However, Farm Creek, which is a tidally influenced waterway traverses the northern portion of this ROW. The railroad bisecting the refuge is on its own property and several utilities including fiber optic cable and a gas line have right-of-ways on the railroad. This frequently results in their equipment spilling over onto the refuge during maintenance of their lines but in turn helps keep access roads open for staff use.

In May of 1993, Biologist Melvin contacted the Corps of Engineers (CoE) to request permission to renovate the creek crossing at Featherstone. The ROW traverses the creek and has been used by the railroad company and local gas company to access their ROW's. Recently, this crossing through the creek has silted-in making it nearly impossible to cross even in a four-wheel drive vehicle. The Refuge would like to upgrade this access by placing large stone (crushed # 2 or 3) along the bottom of the creek bed to allow passage by refuge vehicles and other equipment to conduct official activities on the Refuge, such as law enforcement, biological surveys, maintenance and other refuge operations.

3. Other - Nothing to Report

D. PLANNING

1. Master Plan - Nothing to Report

2. Management Plan - Nothing to Report

3. Public Participation - Nothing to Report

4. Compliance with Environmental Mandates - Nothing to Report
5. Research and Investigations - Nothing to Report
6. Other - Nothing to Report

E. ADMINISTRATION

1. Personnel

see Mason Neck

2. Youth Programs - Nothing to Report
3. Other Manpower Programs - Nothing to Report
4. Volunteer Program - Nothing to Report
5. Funding

Featherstone Refuge does not receive funding and is handled through Mason Neck. See Mason Neck for funding information.

6. Safety - Nothing to Report
7. Technical Assistance - Nothing to Report
8. Other Items - Nothing to Report

F. HABITAT MANAGEMENT

1. General

Featherstone Refuge presently consists of 325 acres of which 80 is forested upland, 220 palustrine wetland, and 25 is open water. This area is a tidally influenced freshwater wetland. Portions of "Hidden Lake", the main portion of Farm Creek running through the refuge, was at one time diked and appearsto have been used for fisheries management in the late 1800's or early 1900's. This dike has deteriorated to a few pilings in the water and short earthen section that is no barrier to water, wildlife, or boaters.

2. Wetlands

The forested wetland sections of the refuge are comprised of red maple, sweetgum, yellow poplar, and water willow. Emergent marsh dominated by yellow pond lily, pickrel weed, and arrow arum is located mainly on the southern section of the property.

3. Forests

The pockets of upland forest scattered throughout the refuge are at or near climax stage and are comprised mostly of mixed oak species with Virginia and loblolly pine. In most areas there is little ground cover. Areas bordering Neabsco Creek consist of steep slopes with an understory of mountain laurel.

4. Croplands - Nothing to Report
5. Grasslands - Nothing to Report
6. Other Habitats - Nothing to Report
7. Grazing - Nothing to Report
8. Haying - Nothing to Report
9. Fire Management - Nothing to Report
10. Pest Control - Nothing to Report
11. Water Rights - Nothing to Report
12. Wilderness and Special Areas - Nothing to Report
13. WPA Easement Monitoring - Nothing to Report

G. WILDLIFE

1. Wildlife Diversity

The refuge provides important wintering and nesting habitat for waterfowl, wading birds, and shorebirds. Wintering and migrating waterfowl include black duck, mallard, blue-winged teal, wood duck, and hooded merganser.

2. Endangered and/or Threatened Species

Bald eagles are frequently observed using the refuge. The shoreline provides important feeding and perching habitat. The pair that nested on Featherstone initially nested in the swamp area between the railroad tracks and the river just above the mouth of Neabsco Creek. They moved the next year to a chestnut oak on the third peninsula in from the railroad bridge, and after three years moved west, possibly onto the neighboring developer's land. Their current status is unknown.

3. Waterfowl

Volunteer David Mitchell installed eight wood duck nest boxes on Featherstone Refuge

on January 27 of 1993. On March 28, 1994 by Biologist Melvin and Intern Smith removed five of the seven wood duck boxes. Three of the five boxes removed had been vandalized, one had been shot several times with a 22 cal. weapon. None of the boxes had been productive for the past two years.

4. Marsh and Water Birds - Nothing to Report
5. Shorebirds, Gulls, Terns, and Allied Species - Nothing to Report
6. Raptors - Nothing to Report
7. Other Migratory Birds - Nothing to Report
8. Game Mammals - Nothing to Report
9. Marine Mammals - Nothing to Report
10. Other Resident Wildlife - Nothing to Report
11. Fisheries Resources - Nothing to Report
12. Wildlife Propagation and Stocking - Nothing to Report
13. Surplus Animal Disposal - Nothing to Report
14. Scientific Collections - Nothing to Report
15. Animal Control - Nothing to Report
16. Marking and Banding - Nothing to Report
17. Disease Prevention and Control - Nothing to Report

H. PUBLIC USE

1. General

The refuge is closed to all public use due to poor access. It does have considerable illegal visitation, mostly ignorant of the rules and non-invasive but there is also damage by all terrain vehicle trespass, trees being cut for access, and small temporary structures being build for shelter or hunting.

2. Outdoor Classrooms - Students - Nothing to Report
3. Outdoor Classrooms - Teachers - Nothing to Report
4. Interpretive Foot Trails - Nothing to Report

5. Interpretive Tour Routes - Nothing to Report
6. Interpretative Exhibits and Demonstrations - Nothing to Report
7. Other Interpretive Programs - Nothing to Report
8. Hunting - Nothing to Report
9. Fishing - Nothing to Report
10. Trapping - Nothing to Report
11. Wildlife Observation - Nothing to Report
12. Other Wildlife Oriented Recreation - Nothing to Report
13. Camping - Nothing to Report
14. Picnicking - Nothing to Report
15. Off-Road Vehicling - Nothing to Report
16. Other Non-Wildlife Oriented Recreation - Nothing to Report
17. Law Enforcement

On September 14, 1993 Refuge Manager Milton and Maintenance Worker Boska completed a patrol of Featherstone NWR, looking for reported campsites for homeless individuals with negative results.

Refuge officers Boska and Schultz conducted one Saturday patrol at Featherstone NWR in April 1994. This patrol was scheduled to provide a presence of the USFWS. Officers Boska and Schultz also responded to fishermen trespassing at Mason Neck NWR.

On July 29, 1994 officers Schultz and Sanderson encountered a male carrying fishing gear in Featherstone NWR. He said he had been fishing there for 12 years. Officer Schultz informed him that the area is a fish and wildlife refuge and closed to the public (the area is not well posted). Officer Schultz said he could fish one last time but not to return.

I. EQUIPMENT AND FACILITIES

1. New Construction - Nothing to Report
2. Rehabilitation - Nothing to Report
3. Major Maintenance - Nothing to Report

4. Equipment Utilization and Replacement - Nothing to Report
5. Communications Systems - Nothing to Report
6. Computer Systems - Nothing to Report
7. Energy Conservation - Nothing to Report
8. Other - Nothing to Report

J. OTHER ITEMS

1. Cooperative Programs - Nothing to Report
2. Other Economic Uses - Nothing to Report
3. Items of Interest - Nothing to Report
4. Credits

Schultz wrote the report. Weiler reviewed it.

K. FEEDBACK

Enough has been said

MARUMSCO NATIONAL WILDLIFE REFUGE
Woodbridge, Virginia

INTRODUCTION

Marumsko National Wildlife refuge is an unmanned satellite of Mason Neck Refuge. The Refuge is located 3 miles west of Mason Neck Refuge at the mouth of the Marumsko Creek where the creek joins the Occoquan Bay. The Refuge is approximately 20 miles from Washington, D. C., in Prince William County.

Marumsko Refuge was established in 1973 on lands declared excess by the U.S. Army. Conveyance of the property to the U.S. Fish and Wildlife Service was simply a transfer between Federal agencies. Title remained vested in the United States. One transfer limitation was written that security of the research and development operation of the adjacent Harry Diamond Laboratories must be maintained.

The refuge consists of 63 acres of freshwater tidal marsh. Topography is almost entirely a flat tidal marsh with elevations of sea level to less than 10 feet.

The only public use consists of visitors viewing the refuge from a trail on the adjacent Prince William County Veterans Memorial Park or people entering by canoe from Occoquan Bay.

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I. EQUIPMENT AND FACILITIES

1. New Construction - Nothing to Report	6
2. Rehabilitation - Nothing to Report	6
3. Major Maintenance - Nothing to Report	6
4. Equipment Utilization and Replacement - Nothing to Report	6
5. Communications Systems - Nothing to Report	6
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7. Energy Conservation - Nothing to Report	6
8. Other - Nothing to Report	6

J. OTHER ITEMS

1. Cooperative Programs - Nothing to Report	6
2. Other Economic Uses - Nothing to Report	6
3. Items of Interest - Nothing to Report	6
4. Credits	6

K. FEEDBACK

A. HIGHLIGHTS

This is the last narrative for Marumsc National Wildlife Refuge. In future reports, it will be listed as Occoquan Bay National Wildlife Refuge.

B. CLIMATIC CONDITIONS

see Mason Neck National Wildlife Refuge section for data

C. LAND ACQUISITION

1. Fee Title

Also see Mason Neck NWR since initially acquisition of the Woodbridge Research Facility was to be as the Woodbridge Division of Mason Neck NWR. Narrative below drawn from staff notes during the event.

The Army initiated public meetings on April 2, 1993 to discuss disposal of the Woodbridge Research Facility (Harry Diamond Laboratory or WRF). Refuge manager Milton and secretary Mitchell attended. On May 5, refuge manager Milton met with realty officer Gib Chase and staff from the Library of Congress, CH2M, and Department of the Army to discuss each agency's interest in the disposal of the WRF. The U.S. Fish and Wildlife Service (Service) is interested in the whole property while Library of Congress wants either the whole area, leasing portions to the Service, or just the uplands which will be used for warehousing. By the end of the summer, the Army published a draft Environmental Assessment for closure of WRF with the preferred alternative being for the Service to get the wetlands with the uplands going to Prince William County for economic development. A House bill with through Department of Defense had wording specifying the uplands be given to the Library of Congress was defeated and replaced with wording that would give the Library of Congress land at Fort Meade instead. Senatorial language by Virginia Senators Warner and Robb directed the land to go totally to the Fish and Wildlife Service. Public meetings, negotiations between agencies, and discussions regarding cleanup of the site before the Service could take over continued through 1997.

2. Easements - Nothing to Report

3. Other - Nothing to Report

D. PLANNING

1. Master Plan - Nothing to Report

2. Management Plan - Nothing to Report

3. Public Participation - Nothing to Report
4. Compliance with Environmental Mandates - Nothing to Report
5. Research and Investigations - Nothing to Report
6. Other - Nothing to Report

E. ADMINISTRATION

1. Personnel

see Mason Neck

2. Youth Programs - Nothing to Report
3. Other Manpower Programs - Nothing to Report
4. Volunteer Program - Nothing to Report
5. Funding

Marumscos is unfunded and dependent upon Mason Neck funds - see Mason Neck

6. Safety - Nothing to Report
7. Technical Assistance

On March 6, 1995 at approximately 12:30 pm, Schultz was contacted by Steve Turner, Virginia Department of Environmental Quality (VADEQ), and informed of a battery acid spill from a tractor trailer incident which took place at 8:00 am at the intersection of U.S. Route 1 and Longview Drive affecting the northbound lanes of Route 1. He was requesting permission to flush the battery acid which had been neutralized with lime into the storm water drainage system which empties into a detention pond (west of Veterans Memorial Park) and then into Marumscos NWR and Potomac River. Apparently the tractor trailer which was carrying used batteries had its load shift, breaking 50+ batteries which then leaked approximately 110 gallons of 27% sulfuric acid onto the road surface (according to Peter Gallagher, Metro Battery representative). VADEQ neutralized the acid by spreading 30 to 40 bags of lime on the road surface. Biologist Melvin immediately contacted Tim Fannin, RRC requesting assistance and procedural advice. Fannin then contacted Cindy Kane (filling in for FRC Steve Zylstra) in the ESFO at White Marsh, Virginia. Cindy contacted Steve Turner and requested that the acid not be flushed into the drainage system as long as it did not pose any human health or safety hazards. Upon Cindy's request, Biologist Melvin and ORP Schultz met with Steve Turner and other representatives of VADEQ at 1:30 pm on site and were informed that they were not going to flush the acid but were continuing to sweep and scoop up the neutralized substance and remove from the site. VADEQ informed Biologist Melvin that a small amount of the acid had reached the storm water drainage system which eventually

empties into Marumsco Creek (NWR). Another VADEQ representative indicated that the pH at the outflow was neutral but he had noticed a small pool with several dead "earth worms". Biologist Melvin collected a water sample from this drainage area for future analysis if necessary. ORP Schultz took several photographs of the spill site, tractor trailer and clean-up crews. The contractor responsible for the clean-up is Industrial Marine Service (IMS). The Incident Commander for this spill is John Medici, Prince William County HAZMAT coordinator. Biologist Melvin will make a follow-up inspection of Marumsco NWR on March 7, 1995 to determine any adverse affects to the resources at Marumsco NWR

8. Other Items - Nothing to Report

F. HABITAT MANAGEMENT

1. General - Nothing to Report
2. Wetlands - Nothing to Report
3. Forests - Nothing to Report
4. Croplands - Nothing to Report
5. Grassland - Nothing to Report
6. Other Habitats - Nothing to Report
7. Grazing - Nothing to Report
8. Haying - Nothing to Report
9. Fire Management - Nothing to Report
10. Pest Control - Nothing to Report
11. Water Rights - Nothing to Report
12. Wilderness and Special Areas - Nothing to Report
13. WPA Easement Monitoring - Nothing to Report

G. WILDLIFE

1. Wildlife Diversity - Nothing to Report
2. Endangered and/or Threatened Species - Nothing to Report

3. Waterfowl - Nothing to Report
4. Marsh and Water Birds - Nothing to Report
5. Shorebirds, Gulls, Terns, and Allied Species - Nothing to Report
6. Raptors

On August 24, 1994 a Mississippi kite was observed on Marumsco NWR by Biologist Melvin and volunteers Waggener and Shiflett.

7. Other Migratory Birds - Nothing to Report
8. Game Mammals - Nothing to Report
9. Marine Mammals, Nothing to Report
10. Other Resident Wildlife - Nothing to Report

H. PUBLIC USE

1. General

The refuge itself is below mean high water so it is not really considered accessible and is therefore closed to public access. The water above the refuge is navigable water so limited boating activity may occur but the waters are so shallow that only a kayak or canoe can access the area and those can not get into many of the marsh areas. Activity adjacent to the refuge that includes looking out over the refuge is included in public use.

2. Outdoor Classrooms - Students

Outdoor Recreation Planner Schultz met with teachers at GarField High School on September 2, 1993 to discuss "Project Refuge". They are adopting Marumsco Refuge and collecting baseline data for the Service during a series of 10 field trips throughout the year. About 100 students and 10 teachers will be involved in the pilot program that will survey the refuge's boundaries and collect data on water quality, soil information, and common plant and animal species. Patterned after the refuge's program with Thomas Jefferson High School, the students will be collecting information for use by refuge staff in management decisions. The program is cross-curricular, including chemistry, biology, earth science, math, English, art, and vocational skills.

After a pre-trip orientation on October 8, GarField High School initiated "Project Refuge" with 100 students studying Marumsco NWR and collecting baseline data for the refuge. On October 12, 50 students and 6 teachers visited the refuge and started collecting data. A different 50 students and 6 teachers continued the studies on October 13. They are planning 3 more paired visits to formalize their studies. If the students and teachers find there is enough to keep them interested, this will become an ongoing association between the refuge and school with both benefitting, the refuge getting data and a support base and

the school having a field research area with practical application of their studies.

3. Outdoor Classrooms - Teachers - Nothing to Report

4. Interpretive Foot Trails - Nothing to Report

5. Interpretive Tour Routes - Nothing to Report

6. Interpretative Exhibits and Demonstrations

In March, 1994 ORP Schultz, assisted by Biologist Melvin, developed a large standing visual display which featured future benefits of adding the Woodbridge Research Facility to the Marumsco NWR. The display was presented at the public meeting held in Prince William County.

7. Other Interpretive Programs - Nothing to Report

8. Hunting - Nothing to Report

9. Fishing - Nothing to Report

7. Other Interpretive Programs - Nothing to Report

8. Hunting - Nothing to Report

9. Fishing - Nothing to Report

10. Trapping - Nothing to Report

11. Wildlife Observation - Nothing to Report

12. Other Wildlife Oriented Recreation - Nothing to Report

13. Camping - Nothing to Report

14. Picnicking - Nothing to Report

15. Off-Road Vehicling - Nothing to Report

16. Other Non-Wildlife Oriented Recreation - Nothing to Report

17. Law Enforcement - Nothing to Report

18. Cooperating Associations - Nothing to Report

I. EQUIPMENT AND FACILITIES

1. New Construction - Nothing to Report
2. Rehabilitation - Nothing to Report
3. Major Maintenance - Nothing to Report
4. Equipment Utilization and Replacement - Nothing to Report
5. Communications Systems - Nothing to Report
6. Computer Systems - Nothing to Report
7. Energy Conservation - Nothing to Report
8. Other - Nothing to Report

J. OTHER ITEMS

1. Cooperative Programs - Nothing to Report
2. Other Economic Uses - Nothing to Report
3. Items of Interest - Nothing to Report
4. Credits

Schultz wrote the report. Weiler reviewed it.

K. FEEDBACK

Enough has been said